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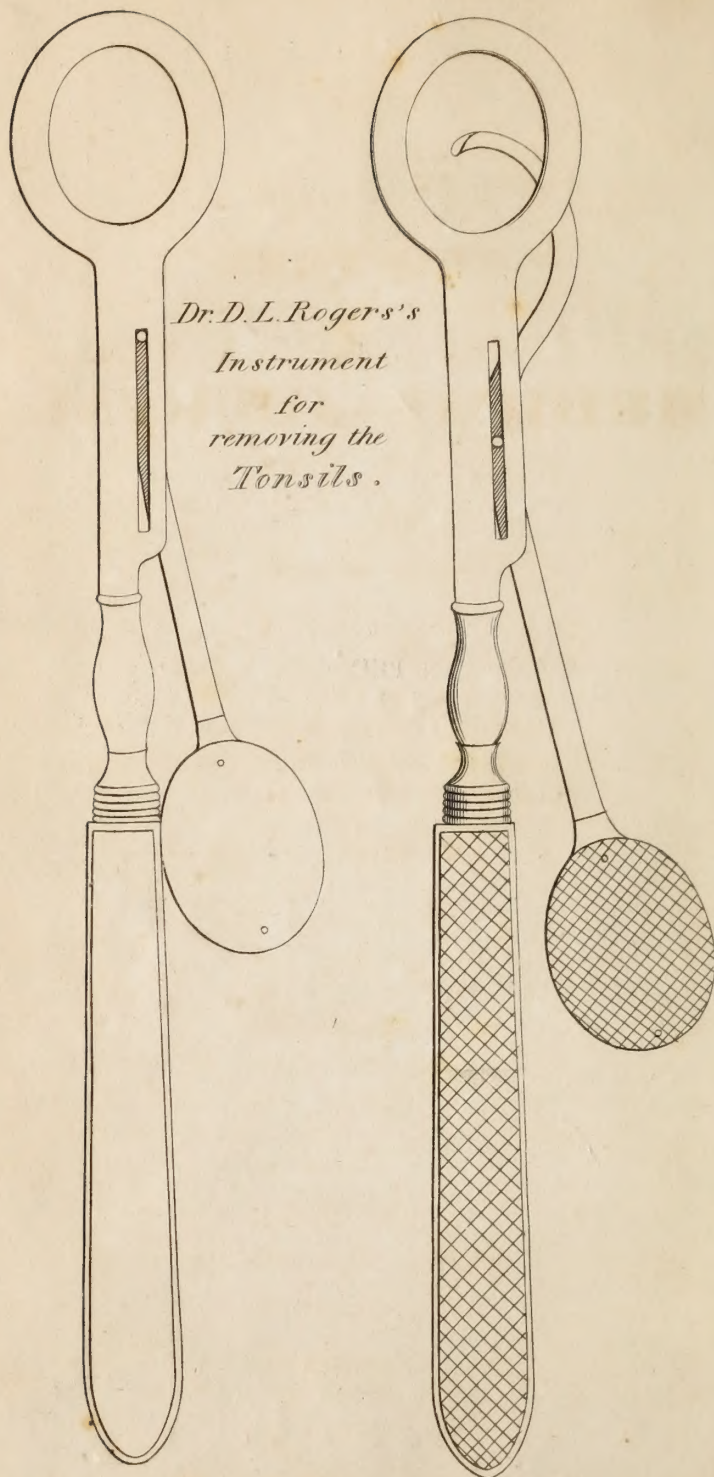
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THE
NEW-YORK
MEDICAL JOURNAL.

CONDUCTED BY
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EDITED BY

DANIEL L. M. PEIXOTO, M.D.

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THE
NEW-YORK MEDICAL JOURNAL.

MAY, 1831.

ARTICLE I.—*Description of a new Instrument for excising enlarged Tonsils.* By DAVID L. ROGERS, M. D. of New-York. (With a Plate.)

PERHAPS there is no operation in surgery of the same magnitude, that has been attended with greater difficulties, than the removal of enlarged tonsils. The situations of the tonsils, their connexion with large vessels of the neck, and the spasmodic contraction of the surrounding muscles, have at all times rendered their excision a difficult, and sometimes a fatal operation. The older surgeons resorted to the actual and potential cautery for their removal. This was not more cruel, nor dangerous, than the practice pursued in the times of Paulus Ægineta, of dividing the mucous membrane, and tearing them from their bed by hooks. At the present time, the the common scalpel, the scissors and the ligature, are in more common use in this country and in Europe. I shall offer but a passing remark upon these different instruments, which will be confined to stating the inconveniences attending them. The use of the scalpel is attended with great difficulty, in consequence of having to employ the double hook in a part so deeply situated, and is likewise attended with great danger, from the proximity of the carotid artery and other vessels of the neck. Of the truth of this the records of surgery bear sufficient evidence.*

The objection to scissors must be apparent to every one. They must of necessity, upon the principle upon which they cut, make

* Burns on the Anatomy of the Head and Neck.

an irregular, lacerated wound, which is always liable to slough; and the inconvenience attending ligatures is such, that no surgeon would willingly employ them, except from prudential motives.

Several ingenious instruments have at different times been invented, for the purpose of excising the tonsils, without endangering the neighboring parts. Among the number, the one proposed by Dr. Physic, of Philadelphia, is most deserving of notice. It consisted of two steel rings attached to a handle. Between the two rings he placed a lancet-shaped knife, which moved by a spring placed in the handle. This instrument has undergone several modifications; one by Dr. Cox, of this city. There is an objection to this latter instrument, in consequence of the ring and knife being separate, and the knife having to be adjusted, after the ring is placed upon the tumor. The inconvenience is noticed particularly in children, who will object to a cutting instrument entering their mouth; and, besides, by their constant movements, the parts within the mouth are in danger of being wounded.

The instrument which I now offer to the profession, is so constructed as to avoid the inconveniences and dangers, which I have stated as existing in relation to the others. It possesses the advantage of a single instrument, and it cannot by any possibility injure any other part than the one to which it is applied. The great advantage this instrument possesses over all others, is that it may be used in children without producing the least alarm, as the knife is entirely concealed, and can be applied without exciting suspicion. A difficulty often exists in children, to keep the mouth open during the operation. The form of this instrument effectually prevents them from closing it. One ring will answer for any sized tumor; a slight movement of the knife fixes the instrument; and, lastly, its simplicity and cheapness will place it within the power of any practitioner to possess one.

Having operated several times on children and adults, I am not conscious that any alteration could be made in this instrument, for the better. Having for the same reasons requested Professor Mott to use it, and express to me his opinion of its merits, he has obligingly sent me the following note:—

25 *Park-Place*, March 5, 1831.

DEAR DOCTOR,

I am delighted with the use of your new instrument for excising the tonsils. The rapidity with which the operation can be performed, combined with the safety, gives it, in my opinion, a

great superiority over any other instrument, or method of removing these parts, of which I have any knowledge.

Yours sincerely,

VALENTINE MOTT.

DR. D. L. ROGERS, Market-st.

Description of the Instrument.

To a common handle is attached a steel ring, of sufficient breadth to admit a groove on its inner surface; deeper at its junction with the handle, with an opening on its superior surface, of a half an inch in length, through which a common probe-pointed bistoury is introduced, possessing a curvature equal to half the circumference of the ring. This bistoury is attached to the handle of the instrument, fixed to a slide by a rivet, and supported on its under surface, by a small spring, which keeps the bistoury in its place within the ring. To the end of the bistoury is attached a handle, of sufficient size to give the operator a complete control over the bistoury.

In using this instrument, the patient should be placed in a chair opposite a strong light, and an assistant should stand behind to steady the head, and one to hold open the mouth, on the opposite side from the one on which you are about to operate. The bistoury being well pushed forward, so as to be completely concealed within the ring, it is then to be placed upon the tonsil. After being satisfied, that it is at the base of the tumor, a slight movement of the handle of the bistoury upwards, fixes the instrument. When you are ready to complete the operation, continue to elevate the handle of the bistoury, and at the same time to pull it forward, when it traverses the groove of the ring by dividing every thing contained within its circumference. It is done with such rapidity, that the patient is hardly conscious of its completion.*

* I am much indebted to Mr. George Teiman, Surgeon's Instrument Maker, No. 35 Chatham-st., for the neatness with which he has executed my orders in making this instrument.

ART. II.—*Practical Remarks on Epidemic Dysentery and Remitting Fever, their unity of character, and the use of the Sulphate of Morphine in their treatment.* By BENJAMIN BASSETT, M. D., of Peekskill, New-York.

DURING the season of 1828, immediately after the accession of cold nights, the remitting fever, which prevailed in an alarming manner throughout an extensive fenny district, in the town of Cortlandt, attacking from two to nine at once at every house, suddenly changed its character, by assuming an inordinate degree of irritability of the mucous membrane. In a few instances, the disease was attended with all the symptoms of genuine dysentery; but such as I saw, readily yielded to the same remedies which were so useful in cases of the fever. There were several deaths in the vicinity of my field of practice from dysentery; one, which occurred at a house where I afterwards prescribed, was manifestly occasioned by the improper use of a dose of unprotected calomel, given in the morning, previous to a paroxysm of fever. The case was a robust boy, four years old, able to walk about the house when the medicine was given;—he died in the evening following the operation. Since the first of September of the year 1829, the fever exhibited a similar state of the mucous membrane, to a far greater extent, with a greater degree of debility, and especially of the digestive organs. The first case of dysentery that I saw, was a feeble man, aged 60 years, subject to a chronic, painful and obstinate diarrhœa. After the usual premonitory symptoms of approaching fever, he was attacked with chills, followed by a hot stage of fever, and attended with diarrhœa. He took, from his own prescription, a dose of castor oil, on the second day of the disease, and on the third I saw him, laboring under much irritation and restlessness, with stools of bloody mucus, attended by the usual painful tenesmus, and extreme soreness at the epigastric region, manifested by pressure. Having been myself a pupil of the late venerable Rush, it was easy for *me* to fix my eye on the *unity* of the disease with the prevailing fever. There was a case of intermitting fever in the same house at that time, and the remitting fever was prevailing all around it. I learned by inquiry that there had been paroxysms of fever the two preceding evenings, with an increase of pain, much thirst, and a great heat over the stomach and bowels. I therefore ordered mucilaginous drinks through the day, and left twenty grains of calomel, combined with opium, to be given in the evening,

when that paroxysm began to subside. Fourth day,—the calomel, which had been given at 10 o'clock at night, had not operated, but the patient had rested better than usual. Gave a dose of castor oil, and saw him again in the afternoon; he had three motions in quick succession, but I could discover no marks of bile in any of the stools. Laudanum by the mouth, and starch and laudanum injection in some measure eased his pains; and I left the same dose of calomel and opium for the following night. Fifth day,—the calomel had operated without the oil, but the stools exhibited the same paucity of bile. The patient was restless, with frequent respiration, following every attempt to move in the bed, or every effort to speak. The marks of irritation were now of a peculiar kind, well known to the experienced eye to be that consequent upon the use of mercury. As the dysenteric symptoms of the fever, during the last season, had uniformly yielded to two such doses of calomel and opium, I now learned that I had a more obstinate foe to contend with,—one not to be conquered by herculean, but by some more soothing means, better adapted to the peculiar irritability of the system. I therefore prescribed eight drops of the solution of sulphate of morphine, ordered it to be repeated whenever the pain returned, and left a large tablespoonful of calcined magnesia to be given at 10 o'clock that night. Sixth day,—the pain had been very severe during the previous paroxysm, but readily yielded to the morphine. The magnesia had procured three large free stools, chiefly of bloody mucus, emitting the smell of putrid flesh; but they were discharged without the usual tenesmus. Gave the same quantity of magnesia, with a dose of pulverized charcoal, and eight drops of the morphine, and ordered them all to be repeated at 10 o'clock at night. Seventh day,—the patient had rested well during the night, after the usual paroxysm had subsided; the stools were free, without tenesmus,—less bloody, but without the least tinge of yellow bile. As the fever, this season, in the worst cases, had been uniformly attended with this hepatic obstruction at first, or at least, a want of all excretion of bile, I was fully sensible that calomel in some way was indispensable in the case. I had tried half a grain of ipecacuanha, which nauseated, and produced such painfully ineffectual efforts to vomit, that the patient charged me with cruelty. I ordered a pill of two grains of calomel, with the usual dose of morphine, to be taken after the evening paroxysm, and the magnesia next morning. Eighth day,—the calomel had excited more pain in the operation, than magnesia alone, but the morphine taken at the time, had soothed it like a charm; and the mucus in the

stools was tinged with yellow bile. This, then, was the stated prescription for three successive days,—two grains of calomel, with the morphine, at night, the magnesia next morning, and morphine to calm the disturbance during their operation. Eleventh day,—the stools had become sufficiently bilious, the evening paroxysms had ceased, but that frequent respiration and expression of anguish, arising from every voluntary motion of the body, together with a few fresh particles of blood in the stools, led me to suspend the use of the calomel; magnesia alone, with mucilages and the morphine, for two days more, rendered the patient convalescent.

There was in this case another evidence of *unity* with our prevailing fever. In all the bad cases of fever which I had seen this season, with that inordinate irritability of the mucous membrane, the patients, after five or six days of rapid convalescence, were uniformly attacked with a chill, followed by fever; and the heat of the skin, which had been excessive over the stomach and bowels, became concentrated during the paroxysm about the neck and head. The bowels having lost their irritability, the head apparently took the whole force of the disease. In these cases, I am in the habit of giving, with manifest advantage, a few small doses of calomel, without morphine, to operate gently on the bowels, and restore the hepatic circulation; or if, after the excitement shall have been equalized, slight paroxysms of fever continue to return, the sulphate of quinine, carried off by calomel, will accomplish the cure.

REMARKS.—1st. The family of the patient whose case has been related, soon observed the striking difference between the effects of morphine and those of laudanum. They had used the last previous to my first visit; and in my absence the two succeeding days, they had been compelled to give it to relieve pain, in consequence of the immediate return of all their starch injections. Laudanum, they observed, would diminish the severity of pain, but would not soothe his peculiar irritable, restless feelings, and always left him thirsty; whereas, the white drops, as they were called, would immediately expel all those evils, and give the patient refreshing sleep.

2dly. It is important, in cases of dysentery, to look to the character of the *the then prevailing epidemic fever*, in all our prescriptions. Several deaths occurred in the vicinity of my practice, which, I have reason to fear, were occasioned by European *general* prescriptions for *the dysentery*. This disease was, in the days of Sydenham, a "*febris introversa*," always

partaking of the character of the "reigning" epidemic fever, and it has been so ever since.

"Adapt your remedies to the excitability of the system," said Doctor Rush, who has taught more true practical principles in medicine than any other man. As an illustration of this axiom, he often related the story of an aged woman, whose auditory nerves were in such a peculiar state, as to convey to her mind a distinct idea of sound produced by a pin piercing a piece of paper, but she could not hear the report of a cannon. Strong cathartics, operating upon the extremely excitable mucous membrane, produce violent, irregular motions, that are perfectly incompatible with true peristaltic action. Besides, they do more injury to the living fibre, in such cases, than their evacuations will do good. A very experienced physician, the last season, finding, after the cold nights, that his usual cathartics, which had been so useful during the warm season in remitting fever, now irritated to such extent as to aggravate the disease, and not knowing the powers of calomel with opium, was compelled to adopt a more lenient practice; he therefore gave daily small doses of calcined magnesia, until the irritability subsided, with great benefit to his patients, who uniformly recovered.

Having already alluded to the epidemic fever of 1829, it may be useful to give a more particular description of it, and, at the same time, to state my views of the nature and treatment of the remitting fever of New-York,—the result of personal observation and experience, in three different sections of the state. Our systematic works, issuing from the hands of European book makers, are too *general* in their prescriptions, for the disease in question. All practical men know how much worse than useless is that knowledge, which does not extend to *particulars*. This *general* knowledge to which I allude, will enable an author to make extensive compilations, and to coin an extensive catalogue of new latinized terms; it will enable a physician to display his extensive learning in conversation; and I will add, if he possess not the *particulars*, it will also enable him to produce much needless suffering, and to become familiar with the fatal results of the cases intrusted to him. As an illustration of these truths, I will quote a short sentence from Thomas's Practice, under the head of "Remittent Fever."

"It will, in *all cases*, be right to cleanse the stomach, by giving a gentle emetic of ipecacuanha, or a solution of tartarized antimony, which, *perhaps*, may be preferable." It is, in our climate, far from being true, that it is right in *all cases* to give

emetics, as it will appear in the sequel. Besides, why does he not describe particularly those cases to which each of these very different articles is most suitable, and why does he not mention the time of day in which they are to be administered?—These are important particulars. There are many cases, wherein antimonial emetics, would prove as fatal as the sheriff's halter, and there are others, in which they would be highly useful. I have myself witnessed the fatal effects of antimonial emetics, administered by other hands. Nor is this the first season, in which they have exerted a baneful quality. Dr. Burton, of Jefferson county, once informed me, that a remitting fever prevailed in the vicinity of Sackett's Harbor, and in a part of Oswego county, soon after the last war with England, which proved uniformly fatal in every instance wherein an antimonial emetic had been administered. In these cases, the strength of the alimentary canal was so completely prostrated by the remedy, that the muscles which move the jaw would partake of this weakness, and the patient's chin would fall involuntarily upon the breast. Whether the paroxysm of remitting fever is a kind effort of Dr. Cullen's *vis medicatrix*, to throw off the immediate cause of the disease, or not, is a question, which, as a mere practical man, I shall leave for medical speculators to solve. One fact I *know* from personal observation and experience, that whatever interferes with, or deranges, or in any manner opposes, the regular daily revolution of the paroxysm and remission, until the case can be put under the perfect control of remedies for intermittents, aggravates the disease, and endangers the life of the patient.

This truth should be our polar star to guide us in every prescription, and will be fully illustrated in the course of the following remarks on the several remedies.

Blood-letting.—In cases of young robust constitutions, of temperate habits, a white tongue, a constant fixed pain in the head and back, indistinct remissions during the three first days, a full, strong, bounding pulse, during the paroxysm, I believe that blood-letting is useful. It is also useful in similar cases, having well marked remissions from the beginning, provided the paroxysms exhibit all the marks of a synocha. We see such cases most frequently in the spring, and in the months of July and August.

First, then : If we see the patient in the time of the first paroxysm, and the hot stage has continued over twelve hours, let blood without delay, as it is to be presumed, that the paroxysm has risen to its intended height.

Secondly,—If we find the patient in the remission, every kind

of remedy must be suspended until the perfect height, or commencement of the subsiding stage of the next paroxysm. Then blood-letting will be equally proper.

I find in my notes, taken during the epidemic of 1828, an account of two experiments, directly to the point in question. Eliza O. and Dennis O., brother and sister, in the same house, and both in the third paroxysm of the fever.

Eliza's paroxysm commenced at 8 o'clock in the morning, and her brother's at 10 o'clock. I bled them both similar quantities at 3 o'clock in the afternoon. The lady was sensible of a slight mitigation of her sufferings, and thought that her fever had begun to subside when the bleeding was performed. This immediately relieved her of pain, brought out a gentle perspiration, that continued through the succeeding night. The remission next morning was much more perfect and comfortable, than that of the preceding day, and it continued until 12 o'clock at noon. Cathartics, in this case, ceased to irritate the intestines as they had done before the bleeding, and three days thereafter, the case was under the perfect command of the sulphate of quinine. Here the bleeding co-operated with the natural tendency of the subsiding stage to bring relief, did not interfere with nature's diurnal revolution, and brought all the benefit to the patient, that it would have done in a continued fever. The brother had a full, active pulse when I bled him, but it was in the rising stage. It reduced the pain and heat of the skin for a few minutes; but the patient was restless and full of anxiety, until both returned to their former points. The paroxysm was prolonged by the operation; the remission next morning was less distinct than the preceding one; in short, it almost converted the case into one of a continued fever, stubborn and protracted in the sequel. I bled two other cases the same day, in another house, one in the rising stage, with the same unfortunate result; in the other case, wherein the hot stage had continued fifteen hours, the bleeding produced a perfect intermission. In some epidemics I have known cases of a different character benefited by blood-lettings. I allude to cases of a diseased state of the *mucous membrane*, manifested by a tongue of red edges, darting pains, extreme restlessness and soreness experienced from pressure on the epigastric region; but a full, strong, bounding pulse, must attend in the paroxysms, and a full pulse in the remission. In cases of a slow, soft, weak pulse in the remission, and a small, tense, frequent pulse in the paroxysm, bleeding is highly improper. But in these irritable cases, the operator must be present at the right moment, or he must substitute for bleeding a soothing cathartic.

Emetics.—All cases of a mild character, without any severe local pain, the patient lying still in bed, and not manifesting much irritability, are peculiarly benefited by emetics, and I never have extended my emetics beyond the cases of this short and simple description, without subsequent repentance.

The use of these remedial agents, however, I may remark, are improper when there is—First, a severe fixed pain in the head, with a painful sensation of soreness, manifested on rolling the head; they are here counter-indicated, on account of the determination to this organ, which would be induced by the effort to vomit. Besides, in feeble constitutions, intemperate drinkers of ardent spirits, and in many other cases, emetics, and especially those of tartarized antimony, are liable to act as cathartics, and without diffusing excitement, and leave the brain in a fatal condition, attended with local sweats about the neck, delirium, coma, subsultus, and death. I have frequently witnessed such results, where the usual routine of practice has been followed.

Second.—Emetics are forbidden in cases attended with soreness in the epigastric region; they put the patient into extreme torture, and aggravate instead of diminishing the disease.

Finally, I never give an emetic, when I hear a patient shriek with pain, or see him rolling in the bed; severe pain in remitting fever is usually the result of high gastric irritation, which renders emetics peculiarly distressing, and generally ineffectual in producing the expected evacuations, on account of the irregular, unnatural motions, which they, under such circumstances, effect. Antimonial emetics, if they are restricted to the above rules, are generally most efficient in vernal remittents, and in the months of July and August, in all cases of good constitutions, temperate habits, free from diarrhœa, and in some instances in the autumnal months. But in cases of aged people, feeble constitutions, intemperate drinkers, and in cases attended with diarrhœa, ipecacuanha is much the safest. As soon as the general character of the epidemic exhibits a highly diseased state of the mucous membrane, I leave my tartar emetic untouched. It was a fever of this character, attended with debility of the digestive organs, in which antimonial emetics were so peculiarly fatal, near Sackett's Harbor.

The rules, then, to be observed in the administration of emetics are, First—During the first paroxysm, if the hot stage has continued over twelve hours, they may be administered without delay, because we have reason to believe it is not in the rising stage, and we know not how long it may continue, in case no remedies were given. If we choose to let blood first, the emetic may be deferred until evening, when it will probably favor perspiration, and induce a fine remission next morning. One

exception to this rule is, in case the bleeding effects a remission soon after the operation, the emetic must be postponed to the subsiding stage of the next paroxysm.

Second.—If seen first during a remission, we may animate our patients spirits with encouraging remarks on his case, but give him no medicine, and let the emetic be left for the subsiding stage of the next paroxysm at about half ebb, for we know not how soon the paroxysm may return. An emetic given just before an expected paroxysm, carries its irritating power through the whole day. A distressing nausea, painful and ineffectual efforts to vomit, pain in the bowels, hot skin, hurried respiration, unnaturally prolonged paroxysm, and imperfect remission, are its invariable consequences. On the contrary, an emetic given at the right time, will, in many cases of a mild character, induce such a perfect remission, that the fever can be quashed at the close of the next paroxysm, by the sulphate of quinine. The exactly right time to give an emetic, is when the paroxysm is at about half ebb. Its action then will coincide with the natural tendency of the subsiding stage, promote perspiration, and favor the succeeding remission; and at that time there is no danger of its continuing to irritate in the next paroxysm, in case the remission is short. They have the same baneful character, if given in any part of the rising stage.

Cathartics.—In all bad cases, these are our chief dependence. The necessary articles of this class, are calomel, castor oil, a compound infusion of senna, manna, aniseed, with a small quantity of Epsom salts, and calcined magnesia. Full doses of Epsom salts, in the beginning of the disease, will do no good, and in cases of diseased membrane, they will, in the language of one of my patients, who tried the experiment, “tie” their “bowels into knots,” and produce the greatest agony imaginable. Dr. Thomas’s calomel combined with rhubarb, or jalap, for irritable stomachs, I would leave to “carry off the putrid feculent matter” of other climates.

In cases, such as I first described as indicating blood-letting, with a white tongue, indistinct remissions, and perfectly free from that irritability of the mucous membrane, which more usually attends the autumnal fevers, calomel in doses of three grains, combined with the same quantity of nitrate of potash, and a small quantity of antimonial powder, given every three hours through the day, and carried off early in the morning, by a gentle dose of the compound infusion of senna, is an excellent cathartic. It cools and moistens the skin, and favors the remissions.

When the remissions are more distinctly marked from the be-

ginning, and the other symptoms being the same as fall under the above rule, it is far better to give the calomel alone in a dose of ten to twenty grains, during the subsiding stage of the paroxysm, followed by a dose of the senna infusion, or castor oil; so as to operate early in the remission. One fact is to be observed, that this infusion, or Epsom salts alone, if given short of six hours after the calomel, will sometimes operate first, and leave the calomel to continue a protracted, irritating operation.

On the other hand, we must insure an end of the operation before the return of the next paroxysm. These two circumstances must be kept in view. According to the usual course of remitting fever of this character, ten o'clock at night for the calomel, and six next morning for the laxative, will be found the best hours for this cathartic.

If, in cases of this class, there is severe local pain, which is not relieved by blood-letting, twenty grains of calomel with two grains of opium given in the same stage of the paroxysm, with a dose of castor oil six hours after, is the best cathartic.

When the cold autumnal nights shall have introduced the disease, with that high state of irritability of the mucous membrane, which has attended the fevers in this vicinity, the two last seasons, we must be on our guard with cathartics. In making reference to these particular diseases, I may be permitted to digress, by noticing them more explicitly in this place. Such cases are attended, this season, (1829,) with the following symptoms; soreness upon pressure at the region of the stomach, having a peculiar distressing and even agonizing sensation, referred to the stomach; pains during the paroxysm, shooting to the head, and sometimes to the extremities, or the elbows and fingers; tossing from one side of the bed to the other; the tongue generally fiery red at its edges, with a thick muddy coat on the centre; pulse slow, soft, and feeble in the remissions; small, tense and frequent in the paroxysm; a burning heat over the stomach and bowels during the paroxysm, disappearing in the remissions. Sometimes an obstinate costiveness, at others a diarrhoea. Remissions distinct from the beginning, and the paroxysm going off sometimes with a profuse perspiration, that flatters only to betray, and apt, during the first days, to come on at irregular hours, when we least expect it; especially so, when there has been any irregular treatment. The worst cases are attended with delirium, and a suffused eye.

We are not to expect all the cases in an epidemic of this serious character; but when we have found one, and observe the tongues of all begin to assume the red edges, or perceive the shooting pains, with marks of irritability, we must, as I

have already said, abstain from the use of tartarized antimony, and protect our cathartics with opium. In such cases, the first cathartic should be twenty grains of calomel, with two of opium; or (in the most irritable cases) ten drops of the sulphate of morphine, followed six hours after by a table-spoonful of calcined magnesia. In cases of less irritability, castor oil will do as well as the magnesia, remembering to allay the disturbance during the operation by the same dose of morphine. *The time when to give cathartics in such cases, is a subject of vast consequence.* As the paroxysms are often irregular at first, we must never prescribe a cathartic to be given at any particular hour of the day; but a nurse must be instructed so to judge, as to be perfectly sure, that the paroxysm has been on, and is actually *subsiding*, when the dose is to be given. Any error on this head might prove fatal. In short, if we expect to keep the "grim monster" at a distance, in an epidemic of this serious character, we must take the worst case, for the time being, out of the hands of nurses, and spend our nights with him ourselves. I have been compelled to do so very frequently. *Never give a cathartic in the remission to operate in the paroxysm*, is a rule which should stand in large capitals, on every page that professedly treats of remitting fever, as we would erect a beacon on dangerous rocks at the entrance of a harbor. Dr. Rush, in his lectures, recommended the observance of this rule, and I have occasionally seen it referred to in periodical publications; but that Dr. Thomas, Dr. Good, and other systematical authors, whose works lay on the tables of our young brethren, as daily practical text-books, should have passed over it in silence, is to me a matter of astonishment. It is my firm belief, that from the non-observance of this rule of practice, on the part of physicians, either ignorant or careless of the rule, or of disobedient or blundering nurses, hundreds die annually in the state of New-York, who might have recovered, if left alone to the operations of nature. The case of the child to which I referred in the course of my remarks on the dysentery of 1828, speaks, in audible language, on this subject, whilst it furnishes a good practical commentary on the *unity* of the dysentery of fenny districts with the prevailing fever. Let it be remembered, that this irritability ebbs and flows every day with the regularity of the tide; that it is increased at the rising stage of the paroxysm in an incalculable ratio; that the violent irritation of cathartics, at this time, added to the augmented irritation from the disease, will actually destroy the life of a patient, who might have sustained the burden of irritation from the disease alone. On the contrary, ca-

lomel and opium, in the *subsiding* stage, when this irritability has been in some measure exhausted by the action of the paroxysm, will coincide in its action with the natural tendency of the subsiding stage, and become an anodyne, sudorifico-cathartic, favoring the succeeding remission, which should be the prime object of every prescription in remitting fevers.

There is another mode of giving anodyne cathartics, in cases of extreme pain and great irritability; that is, calomel in doses of four grains, combined with Dover's powder, beginning at the perfect height of the paroxysm, and repeated every three hours, insuring a cathartic operation by castor oil early in the remission. This is peculiarly adapted to cases wherein the excitement is somewhat insulated in parts of the thorax, with less irritability of the stomach. It is in these cases, where the stomach refuses the smallest quantity of ipecacuanha, that the sulphate of morphine is an invaluable article. On account of the attending hepatic derangement, calomel, in some form, is indispensable, and the best thing to disarm it of its irritating power, is a desideratum in medicine. During the season of 1828, whilst our epidemic was attended with a strong, vigorous pulse, nothing was necessary in the cases, but the daily repetition of a full dose of calomel and opium, with the morning laxative, and mucilaginous drinks. But during the season of 1829, in many cases we were compelled to vary our prescriptions, as in the case of dysentery before described. In 1828 every case was attended with the red-edged tongue. In 1829 some of the worst cases had the tongue with pale-colored edges, and some had almost a natural tongue, except its being more dry.

Diaphoretics.—With the exception of the above sudorifico-cathartics, I believe all internal diaphoretics are worse than useless; if given at all, it must be at the subsiding stage, or they will prove nothing but vile gastric irritants, and we want that time for purges. Dover's powder alone will always do harm in the next paroxysm, by the quality of opium to diminish biliary secretion and excretion. Calomel is the only appropriate companion of opium, in all bilious diseases.

In cases of diseased mucous membrane, the physician must bear it in mind, that he is not only prescribing for *fever*, but also for the highest possible grade of *dyspepsia*. I visited, in council, a case in the year 1829, on the 10th day of the disease, which had been treated with antimonial diaphoretics, during every paroxysm. The pulse in the remission was slow, the skin cool, the remissions long; but they were to the patient the remissions of anguish, faintness, and extreme debility. He died on

the 11th day, a prey to European *general* prescriptions, not adapted to the case.

Blisters.—They are useful, when applied in the course of the spine, in some cases, towards the close of the disease, to remove stupor or headach; and for obstinate vomiting or singultus, when applied to the stomach. They should be put on towards the close of the paroxysm, that their stimulating quality may be exerted during the remission. For any other purpose than these I have mentioned, their burning heat in the paroxysm overbalances all good to be expected from them.

Ablution.—Sponging the body with *tepid* water during the hot stage will sometimes reduce the sufferings of the patient, but *cold* water will always do harm, unless it is applied precisely at the perfect height of the paroxysm. In the rising stage, it seems to act like blood-letting, to hinder and embarrass nature. I have known it, when applied at the beginning of the subsiding stage, whilst the skin was hot and dry, induce a fine perspiration, and bring immediate relief to the patient. Towards the close of the disease, when the paroxysm is attended with a short temporary flash over the stomach and bowels, I have seen cold wet cloths, laid on these parts, quell the whole paroxysm instantly.

Mucilages.—Decoctions or infusions of arrowroot, barley, gum arabic, or the inner bark of the elm, should be used freely in cases of diseased mucous membrane. They enable us to use more calomel, indispensably necessary in the treatment of these fevers.

Counter Irritants.—When we shall interpose with these, is an important question. In our northern climate, I have always approached this subject with such hesitation, that I have not advanced far in the field of experiment. If the fever continue after the return of a clean tongue, with comfortable, clear remissions, I have no doubts on the subject. The quinine should be given at the close of the next paroxysm, from three to nine grains, according to the strength of the patient, in three doses in the course of two hours; and if there is headach, or any local pain, a purging dose of calomel should be given one hour after the quinine. This will at the same time stop the fever, and equalize the excitement. If there is no pain, or any evidence of visceral obstructions, castor oil given at the same time will answer the purpose. I once saw a young lady, of a good constitution, in the evening after the first paroxysm of fever, which had been violent, and was now going off with a profuse perspiration. I gave her an emetic of ipecacuanha, which was not very efficient. On the second day, her tongue had all the

characteristic marks of our worst remittents, though the remission seemed otherwise to be perfect. She had a second paroxysm, much more violent than the first, attended with high delirium, which subsided in the evening with less perspiration, and continued in some degree, until eleven o'clock at night. I saw the necessity of suppressing this case at once, or it would degenerate into a stubborn remittent. She took, at twelve o'clock that night, three grains of quinine; the same at one, and at two o'clock; at three o'clock she took fifteen grains of calomel, and at seven in the morning a dose of castor oil. On the third day there was no paroxysm, but the skin exhibited the color of jaundice. At nine o'clock at night, she took three grains of quinine; one hour after, fifteen grains of calomel, and next morning, a dose of Epsom salts. Fourth day. Appetite good, the skin clear, and the patient returned immediately to her usual occupations.

This, perhaps it will be said, was preparing the case after the cure; but it was the best of two alternatives, and was happily successful. Early in the disease, whilst the patient is strong, and the system is able to withstand the shock of counter-irritation, we may never fear inflammation or congestion, from nine grains of quinine, whilst it is closely followed by a full dose of calomel; provided, there is a comfortable remission from eleven o'clock at night until eight next morning. The quantity of quinine to be used in remittents, must be regulated by practical principles. Adapt the quantity of the counter-irritant to the excitability of the system. Fevers of irritation or inflammation, attended with remission, do not exhaust excitability by continuance like a continued typhus. A patient, low and feeble, near the close of a remitting fever, who may be cured by three grains of quinine, might be killed by nine. When patients have too freely indulged their appetites during convalescence, they are very liable to sudden relapses, short paroxysms of fever, with headach and a clean tongue. The appropriate remedy is four grains of quinine, followed two hours after by ten grains of calomel. It is remarkable, how these two articles in their operation will leave the head clear, the stomach free from nausea, with a good appetite next morning; whilst calomel alone will be followed by a sense of weakness, more or less nausea, and loathing of food throughout the whole day. On this fact I found an opinion, that twenty grains of calomel, combined with two or three grains of quinine, will, at some future day, be used by physicians as the best cathartic in cases of remitting fever, having distinct or visible remissions. Quinine seems to remove the irritability of the bowels. I never

fear an excessive operation of a cathartic, whilst it is immediately preceded by this excellent counter-irritant.

Anomalous cases of Fever.—First. The patient, after having had two or three regular paroxysms of fever, with pain in the head, and having either taken no remedy, or else a large dose of Epsom salts, which has washed the bowels and depleted the system, without equalizing the excitement, is suddenly attacked with stupor, subsultus and delirium, attended with a slight constant fever, without remissions. This is not the nervous fever, for we can here dispense with wine and laudanum; this is what Dr. Rush used to call “remitting fever, suffocated in the brain.” We must dispense, too, with bleeding, emetics and strong cathartics, lest effusion in the brain follow the sudden depletion, and the patient be lost. Calomel, in doses of two grains, given every three or four hours, so as to act gently on the bowels, and stimulate the hepatic system into action, will translate this insulated excitement gradually, and diffuse it throughout the system; derangement in the hepatic circulation is in fault here. Now the remissions re-appearing here, prove the venerable Doctor’s principles true, and the case is to be managed in future according to the rules in common remittents. 2d. In some cases, habitually subject to attacks of pneumonia, after imprudent exposure to sudden cold, the fever commences with rigors followed by re-action, attended with cough, violent pain in the chest, hurried respiration, and sometimes bloody expectoration. Here the young practitioner should fix his eye on the reigning epidemic; for, whilst he is consulting his nosologic authors, twenty grains of calomel, with two grains of opium, would have dispelled all these formidable appearances of pneumonia, and the physician have nothing before him but a simple case of remitting fever. Should any part of these symptoms remain until the ninth day, calomel, combined with Dover’s powder, according to the above rule, is an excellent remedy. As soon as this insulated excitement, which is the result of the hepatic derangement, shall have been equalized, the remissions become distinct, and there is nothing in the case different from common remittents. Physicians who remove from the New-England hills to the marshy tracts of this state, should consider themselves transplanted into a new medical world, in which all forms of disease, which imitate, in external appearance, those of the east, have still a distinct nature. I was called, in June, 1829, to visit a woman who had suffered from the repeated attacks of intermitting fever during the two past years, and who now, the ninth day after confinement in child-bed, from imprudent exposure to cold, had a

fever, with hurried respiration, violent pain in the muscles of the chest, inability to lie in a horizontal posture, and an alarming hemoptysis. On account of the obstinate prejudice of a bigoted husband, against the use of mercury in his family, I was compelled to try blood-letting, blisters, Dover's powder, saline cathartics, and digitalis, all to no purpose. At length, by stealth, I caused fifteen grains of calomel with one of opium and half a grain of ipecacuanha, to be given at ten o'clock at night. On the next day she was free from any mark of disease, and required no farther remedy. I have often thought, that if nosologists had divided all the various forms of disease, both acute and chronic, which human nature is heir to, into two great classes, called *miasmatica* and *non-miasmatica*, and pointed out the distinctive characters of each two forms now bearing one name, they would have done some essential service to the practice of physic.

From these remarks, our minds are prepared to contemplate profitably the importance of viewing our autumnal dysentery as one with the remitting fever. It is not a question of mere idle speculation, but one of high practical importance. If it is a remitting fever, we are bound to inquire for the time of paroxysms, and observe them with the same minuteness as we do in cases of fever, with the highest grade of irritability of the mucous membrane. In a house where I was attending three cases of remitting fever, a young lady had paroxysms of fever, commencing with a slight chill, and attended with a diarrhoea, which she had concealed from me. On the third day, her friends were alarmed by her frequent stools of bloody mucus, attended with extreme pain, for the disease exhibited all the characters of dysentery. As she was free from that soreness at the epigastric region, and that peculiar restlessness and agony, which attended the bad cases of dysentery or fever, I assured them it would prove a favorable case, and as there was no pain except at the time of stools, it was a proper case for an emetic.

I directed her to take nothing through the day, but frequent draughts of arrow-root, and left forty grains of ipecacuanha to be taken when the paroxysm of fever, which she had experienced the preceding evening, was evidently subsiding. Fourth day.—She had experienced a paroxysm, in the afternoon of the third, but it came on without a chill; she took the emetic at 9 o'clock, which produced a fine perspiration, and she was now free from every vestige of any dysenteric symptom. Left two doses, composed of calomel and Dover's powder, to be taken during the night, in case she had another paroxysm. Fifth

day.—She had taken the powders ; the tongue became clean ; omitted all remedies. She continued to have slight paroxysms of fever for two days more, which were stopped by the sulphate of quinine. The local disease attending dysentery serves, whilst it is at the highest point, like insulated excitement, to render the remissions less visible ; but I never saw a case of autumnal dysentery, on the same ground with remitting fever, without distinct paroxysms of fever, manifested by an increase of heat over the stomach and bowels, increase of pain, thirst, and an increase of frequency and activity of the pulse. In proportion as the local disease recedes, the paroxysms and remissions are more apparent. The truth is, there are as many forms, or varieties of dysentery in the world, as there are varieties of fevers among all the different nations and tribes of the human family. In our marshy tracts, it varies in different seasons, and varies too exactly with the prevailing fever. The balance between the disease of the bowels, and the derangement of the hepatic circulation, differs in the different seasons, sometimes throwing the excess on the one scale, and sometimes on the other. The only safe prescription for it, is exactly that which best suits the prevailing fever, in the cases of diseased mucous membrane. Now, why should we listen to foreign general prescriptions, for a disease, which assumes such an almost infinite variety of forms ? No man is now competent to prescribe for that dysentery, which may prevail on the pestilential shores of Seneca river, in the year 1832 ; but he can calculate with the same certainty as he would an eclipse of the moon at that time, that it would require the same remedies as the prevailing fever requires ; for the great law of epidemics is as invariable as the law of gravitation.

If it be thought that the writer, in the course of these remarks, has manifested a zeal disproportioned to the importance of his subject, it is because he is called to witness deaths, which he verily believes are occasioned by a violation of some of the above rules and principles ; whereas he has never known a single fatal case of remitting fever, or of miasmatic dysentery, wherein those rules have been strictly followed. Besides, our systematical authors are so deficient in particular instructions as respects this subject, that a young practitioner may kill every patient for whom he is called to prescribe, and at the same time justly plead Dr. Thomas, Dr. Good, and many other celebrated authors, in justification of his practice. In the loss of fellow citizens from dysentery, it adds to the sincerity of my regret, that some physicians will suffer the influence of nosological names, to attract their eyes from the plain phenomena of nature, to be fixed on the pages of a British author, until the symptoms of approaching

death shall summon them to close their patients' eyes. The writer has not the vanity to suppose, that he has suggested, in the course of this long communication, a single idea which is new to the observant practitioners, who reside in the fenny districts of this state; his only object is to systematize their thoughts, and present them in a convenient form, to the eyes of some inexperienced youth, who may be hereafter called to practice in the swamps of the state of New-York.

ART. III.—*On the efficacy of large Injections, in the treatment of Bilious Colic. Communicated to THOMAS COCK, M. D., &c., of New-York. By J. S. PAIGE, of Owego, N. Y.*

I TAKE the liberty of communicating the method of treating bilious colic which I adopted about twelve years ago, and which I have followed ever since, with the most complete success.

The plan is, to use injections of mild, tepid fluids, to an amount sufficient to reach the obstructed or constricted portion of the gut, and thereby making a gentle, but firm pressure upon that part from below.

This practice was founded upon the incidents of the following case, which I will briefly notice. Mr. E. B., a strong, athletic man, aged about 35 years, was attacked with this species of colic in the summer of 1818. I was called upon to attend him, and pursued the practice usually adopted in such cases. Among the means made use of, were venesection, opium, various cathartic medicines, enemata, fomentations to the abdomen, general warm bathing, a blister, &c. Forty-eight hours or more were spent in this way, and several consultations were had, but all to no purpose: the obstruction remaining as obstinate, and the pain as distressing as ever.

Another expedient presented itself to my mind, that of acting upon the obstructed portion of the intestine mechanically, by injecting tepid fluids; six pints of warm water, milk and molasses, were ordered, which I commenced introducing with a syringe, intending to use the whole, or even more, if necessary, to effect my purpose. A consulting physician who was present, but unacquainted with my intention, requested me to desist, when I had used but a small part of the liquid; the patient also begged me to desist, saying that no more could be retained;

but I paid little attention to the advice of my counsellor, or the entreaty of my patient, till the latter informed me that he felt a considerable degree of pressure upon the point of obstruction, and after retaining the fluid in this situation a few moments, I desisted, having used the whole quantity prepared, and I began to hope that my work was about to answer the purpose intended, which I found to be the case in about fifteen or twenty minutes. Copious evacuations of fetid matter followed in large quantities, and a cessation of pain, and a general mitigation of symptoms, were the immediate consequences.

The case was subsequently treated with mild laxatives, diaphoretics, &c. ; and after a proper time, gentle tonics were used to restore the action of the system.

Two or three weeks afterwards, the same person was again attacked in the same way from his own imprudence, and he found immediate relief in the same way, and in a like short time.

The success of this plan in these two cases afforded me a useful hint for the treatment of all important cases of a like kind, and I resolved to make further trials, whenever opportunities should present themselves ; and a great many cases have since come under my care, all of which have been attended with the same result ; and, consequently, I have made this the standing rule or method of my practice for the last twelve years.

The rule I have adopted in such cases, and that I would recommend to others, is, to introduce a quantity of fluid with a large syringe, sufficient to make a firm, but gentle pressure upon the obstructed portion of the intestine, which may be known by the pain it gives the patient at that point ; and more certain success may be expected, if the syringe be not withdrawn for a few minutes after this point be attained.

The quantity of fluid to be used, should be measured by the demand of each individual case ; six pints usually answer the purpose ; but in two instances, occurring in the same person, I have found it necessary to use twelve pints at a time, before the object was accomplished.

Perhaps it might be well to evacuate the rectum, before attempting to reach the obstruction. I think there would be an advantage in doing so, as some little impediment would be removed.

In the sequel, such treatment as the particular case shall require, will, of course, suggest itself to any skilful physician, taking into view the cause of the disease, and other circumstances attendant upon the disease.

I generally give mild laxatives, such as castor oil, or neutral

salts, if the case be a simple one, brought on by exposure to cold, or some comparatively trifling circumstance; but if it depend upon some more obviously important cause, as an hepatic derangement, &c., other and more rigorous means should be used.

With regard to the composition of the fluid to be used in such cases, I should not be particular, provided it be sufficiently mild; perhaps mucilaginous injections in many instances might be preferable, particularly if the disease be of some considerable standing, and the intestines irritable or inflamed. It may, however, be proper in some cases to use stimulating mixtures, where there is much torpor of the bowels. But it is the mechanical effect that is almost entirely to be relied on, for success in this mode of treatment.

The means which urge me to recommend this mode of practice above all others with which I have been acquainted, are the following:—

1st. Because it is more certain; a mechanical dilatation of the intestine in this way is easily effected, and in a short time.

2d. Because medicines given by the mouth are so liable to be rejected by vomiting in this disease; or if they are retained, they require more time to act, and are not so sure as this, for they may fail from inefficiency.

3d. Because, although other medicines may act in their usual time, yet by delay the patient is endangered, by the risk of inflammation supervening.

4th. Because it abbreviates the term of human suffering, by mitigating some of the keenest pangs to which our nature is subject, &c. &c.

I give you only the outline of this plan, and if it shall be thought worthy of adopting in this species of disease, and extended to other affections of a somewhat similar kind, you, and those who may become acquainted with it, can make such improvements as shall appear most proper.

You may say, that the idea of introducing large quantities of liquid into the intestines, is not new; it certainly is not; but the application of this practice I have not known to be made to the disease of colic; but in cases of intus-susception of the gut, it has long been recommended and used.

ART. IV.—*Inquiries and Observations on the Bilious Remitting Fevers of Michigan.* By J. V. D. SUTPHEN, M. D.

(Concluded from Page 302, Volume 1.)

PART III.—THEORY OF FEVERS.

Many have attempted to explain the phenomena of diseases called fevers, upon partial grounds. Boerhaave, Cullen, and Rush, are three prominent writers, who have exerted their talents in vain. But shall we despair? Shall we supinely wait, and hug the delusive phantom timidity, leaving future ages to explain away the difficulties we are fully able to surmount? No; let it be the duty of every medical man, to observe, select, combine and arrange whatever comes under his notice, and if he discover any thing worthy of promulgation, let him give it to the world. In this way, we may at some time discover the all-important secret; but as long as great names, or rather great reputations, (which are as liable to be ill founded as opinions,) enslave the mind, and suppress an honest difference in opinion, so long will man be but a mimic, and unworthy of his station.

By such, nothing will be discovered, and the science of medicine will be degraded, rather than elevated. Theory has been thought worse than useless, and indeed the curse of our profession; but on other subjects, theory is serviceable, and why not in medicine? Theory should be properly judged of, according to its practical utility; if of no value in practice, it is indeed a snare to the feet of him who depends upon it.

Theories now extant, as far as my reading extends, are mostly constructed upon grounds so contracted and partial, that they fail to account for the more common phenomena of disease, and cannot be made to yield any valuable assistance in combating diseases.

What I shall now offer to my reader, has not been rapidly formed; but every item has been the subject of mature deliberation, and such points as would admit of experimental proof, have been frequently confirmed. But as the subject is dark and intricate, in the same proportion, I ask a charitable indulgence from the liberal and candid,—from the bigot, I ask nothing.

The human system is so constructed, that its parts are all more or less depending upon one another for an equilibrium, or healthy state of the whole. Health consists essentially in an easy, natural and equal action in the performance of all the functions. Disease consists in an unequal or disturbed action in

more or less of the functions ; or in an entire non-performance of those functions.

It is probable, that the phenomena which constitute health and disease, depend upon certain actions of the several parts of the system, which may be considered specific in quality or kind ; but which admit of considerable variation in rapidity, strength and relative proportion, without losing their identity. We must, therefore, allow a certain latitude of action to every function ; and whatever deviations from a perfect state of health occur within this latitude, cannot be considered as disease, nor do they necessarily require the interference of medicine.

From the foregoing, we readily perceive, that a cause of disease can produce a general effect, by operating upon one part alone. Its immediate influence need not be extended beyond an impression upon the nervous system, for the whole depends upon this, as the foundation and source of all action. When a human being is exposed to, and inhales miasmata, it acts upon the nervous system somewhat similar, but much more permanently than a narcotic, reducing its sensibility, energy and activity. This reduction of nervous energy, necessarily diminishes the activity of every organ in the body, some more, and some less, according to the natural quantity of action in health.

By this I mean, that the effect will be less felt, in proportion to the activity of an organ, and will much more derange the functions of those, which are naturally sluggish and tardy in action.

For instance : an organ which generally performs its functions with vigor, celerity and energy, may be considerably reduced in the quantity, without destroying the quality of its action, or healthy performance : whereas, if the same ratio of reduction be applied to one naturally slow, and predisposed to difficulties, its remaining power of action would be left below all performance.

Upon this principle, which no man will pretend to controvert, we perceive, that by a certain reduction of nervous or vital energy, the functions of one organ may be almost suspended, while those of another are still performed in a tolerable state of health. This point settled, we must direct our attention to those organs, whose functions are apparently performed with difficulty, and whose natural action is slow, to find the first effect of miasmata, effluvia, et cetera.

Of all the functions performed by organic action, the most tardy, uncertain, and liable to derangement, are those of the *colon*. Whether this reduction of nervous energy be the sedative effects of miasma, infection, effluvia, cold or contagion.

which are general,—or whether it be partial or local, occasioned by great exertions of physical strength, calling all the nervous energy to the support of the muscular system, and, consequently, reducing that of other parts ;—or whether it be occasioned by a powerful stimulus externally, as of heat ; or whatever may be the cause of a loss of balance in the distribution of nervous power, or cause of vitality and mobility, it will, to a certainty, desert those sluggish organs first ; and of these the colon stands as chief.

When the colon, from any cause, has lost its functional ability, it becomes unable to free itself of its contents, which accumulate and indurate in its cells. This is, from the first, a cause of irritation, and when favored by circumstances, which may be internal, as, the strength and stamina of the constitution, peculiar state of the system, former diet ;—(whether principally vegetable or animal, which makes great difference in the contents of the colon ;)—or external, as, the season of the year, state of the atmosphere, and habits of exercise—this indurated mass of feces in a few days is to be found in an active putrid fermentation.

On the contrary, the colon may remain for a long time blockaded, without producing more disturbance than restless nights, or unnaturally sound sleep, night-sweats, pain or weakness in the back, general lassitude, yellow tongue, with an ill taste in the mouth, particularly in the morning.

This collection of feces, which is the effect of miasmata, as its original cause becomes the proximate or essential cause of disease, by pressing upon the great sympathetic nerve in the loins, so as to injure and partially obstruct the passage of its fluid, and by this means deranging every function depending upon it. The great sympathetic is so intimately connected with the sanguiferous system, that if it is deranged in any degree, it must necessarily affect the action of the heart and arteries. The pressure upon this great nerve, together with the irritation it occasions, added to that of the colon from its contents, calls the nervous fluid from the cerebral system of nerves, producing an inequality in the distribution of its action, and a nervous plethora immediately around the centre of circulation.

The heart, under these circumstances, becomes more sensible to its natural stimulus, and acts with greater energy ; except when its sensibility is so great that it will not admit of a proper dilatation of its ventricles and auricles. When this is the case, although the heart may act with energy, or even violence, it produces no uncommon effect ; because the quantity of blood

admitted before its contraction, is so small that it is not sufficient to fill the arteries, and extend its momentum to the extremities. In this state of the heart we have a weak pulse. In combination with the former, the heart is occasionally affected with spasm, the pulse is then weak and intermitting. This appears in the labored action of the heart, while at the wrist we find a small, feeble pulse.

When the heart and arteries are in the same state, and will not admit of their natural distension, we find the pulse small and hard. When the heart is less affected than the arteries, and throws at each jet or contraction as much blood as can be transmitted by the arteries, the pulse is moderately full, strong and hard. When the heart and arteries are in perfect unison, and are not so sensible to the stimulus of distension, but retain a freedom of action, and a preternatural sensibility to the stimulus of the blood, the pulse is full, free and strong. When the excitability of the heart is overpowered by the violent impression of the nervous fluid, the pulse is full, soft, weak and frequent. When there is a continual tendency to spasm, and a great sensibility to the stimulus of distension existing in the heart and arteries, the pulse is tense and jerking. In this way, I conceive all the variety of pulses to depend upon the state of the heart and arteries, under the action of a preternatural distribution of the nervous fluid.

When the heart is in that state in which it can admit but a very small quantity of blood before contraction, it does not transmit its proper proportion in a given time, although its pulsations are greater in number; by this means the venous blood is kept back, and congestions are formed in the vena cava, vessels of the brain, vena portarum, or in whatever vessels are most debilitated, and will most readily yield to distension.

While the blood is thus pressing the heart, if we bleed in proportion to this congestion, we reduce the cause of irritation, and in some degree restore the freedom of action; we then find the pulse rising, under an abstraction of stimulus. This appears to be an evidence, that its action may be reduced by an excess of stimuli. A reduction of physical strength is a necessary consequence of a loss of the equilibrium, and call of the nervous power from the muscular, to the sanguiferous system.

Re-action has been much spoken of by medical writers; this, I conceive, may be of two kinds, healthy and diseased.

1st. Healthy re-action is that which occurs in a person after a cold bath, and appears in a universal glow of warmth over the whole body, and some redness, or heightened color of the skin, with moisture. Here there is a sudden abstraction of

nervous energy from the surface, and consequent loss of equilibrium; but the vigor of all the functions, and the activity of the nervous or vital powers, enable it to regain its equilibrium, by a temporary excitement of the arteries alone, on the surface.

2d. Diseased re-action is that which takes place in a person who has suffered such an abstraction or reduction of vital energy on the surface, that the nervous fluid cannot regain its equilibrium, without calling in a general action of the whole sanguiferous system to its aid.

The first, or healthy re-action, takes place in a state of the vital powers which admits of a restoration without violence.

The second, or diseased re-action, takes place when the nervous fluid is unable to regain its balance of action, and becomes diseased through violence.

To render my theory more perspicuous, I will notice and explain the phenomena attending a paroxysm of intermitting fever, from which we can judge of its propriety, in application to other fevers and phenomena.

As the symptoms of this disease are so generally familiar to the profession, I shall not enter into their minute detail, but make my remarks as convenience may dictate.

1st. The cold stage. That an equally distributed, or balanced action of the nervous fluid upon the various parts of the whole system, is necessary to health, cannot be denied upon any known principle. A man may certainly "live and move, and have his being," with a paralytic arm or leg; but even with this, he cannot be considered a healthy man. This prime mover and supporter of animal life, from certain causes, is liable to be disturbed, its equality of action destroyed, and its equilibrium throughout the whole body lost. In this state, it may be compared to its (probable) kinsman, the electric fluid; if one part is negative, and another positive, within certain limits, an exertion immediately follows, to restore an equilibrium, or an equality.

This law we find in every department of the works of nature: in the waters of the ocean, in the atmosphere, in the matter or property of heat; we find it in an active state among mankind; in the vegetable, and even in the mineral kingdom. The law of equality in proportion, when applied to the nervous fluid, (property, power, or whatever it may be called,) is as evident as that of electricity itself. My reader from this must understand, that I entirely reject the "*Vis Medicatrix Naturæ*" of Cullen.

The nervous fluid, from some cause, has lost its equilibrium,

the surface is negative, and the centre positive ; the heart and arteries are so immediately connected with the great sympathetic and cerebral system of nerves, that they are altogether the most liable to be the seat and centre of nervous plethora. In this state we find the system at the commencement of the cold stage ; the want of a proper proportion of the nervous fluid in a part, renders its muscular fibres as liable to spasms, if not more so, than an over proportion.

It is this contraction of the muscular fibres of the skin, which we call constriction ; it is likewise evident in the shrinking and sharpening of the features ; and the deceptive sensation of cold, languor, or a sense of weakness and weariness in the muscular system, is a necessary consequence, when the muscles are not supported and braced, by their natural proportion of the nervous fluid, which is called off to the heart and larger arteries. Yawning or gaping arises from an imperfect decarbonization of the blood, on account of the small quantity passing through them. This is occasioned by an impediment given to the blood by the heart, which being under such extreme pressure of the nervous fluid, that it will not dilate its auricles and ventricles sufficiently to transmit more than one third of its natural quantity. Stretching is occasioned by an uneasy feeling, arising from a loss of balance, and appears to be a natural effort to restore it.

The same exertion or tendency of the nervous fluid towards an equilibrium continues, and probably increases. Cold chills now begin to be perceived, arising from the loins, and continue some time, passing rapidly up and down the lumbar and dorsal muscles, but at length become universal. This tremor of the muscular fibre I conceive to be identical with the constriction of the skin, and from the same cause.

It is worthy of notice, that in all diseases arising from a collection and induration of feces in the colon, chills and rigors always commence in the loins, and here the pain is in after stages. The chills, after some little time, run into rigors, and the patient feels extremely cold ; this sensation of cold, however, is but a deception, for at the time, the heat of the body by the thermometer is above that of health. Stupor sometimes takes place, to a degree resembling apoplexy. To account for this, we have but to reconsider the state of the heart, and the congested state of the vena cava, jugular veins, and sinuses of the brain.

The nervous fluid at last begins to extend itself towards the surface. In proportion as it advances towards the exterior, the symptoms are changed. When the muscular fibre feels its in-

fluence, the tremors or rigors abate ; and when the muscles have received a certain quantum, they become quiescent, steady, and return to their sensibility and motion ; the skin relaxes, from the same cause ; the heart being now partially relieved from the pressure of nervous fluid, it begins to admit a larger proportion of blood at each diastole, which continues in this manner increasing until the heart acts with perfect freedom. We then find the skin red, hot and dry, thirst, throbbing pains, anxiety, restlessness, and perhaps delirium, with a full, hard and strong pulse. This constitutes what is commonly called the second, or hot stage. This stage, when compared with the first, or cold stage, appears in symptoms almost directly opposite ; in the first, the skin is pale and shrunk ; in the second, red and full. In the first, the pulse is small, weak and frequent ; in the second, full, firm and strong.

In the first, the heart is almost overpowered by the violent impression of the nervous fluid ; in the second, it is relieved of this, so far as to give freedom to its action.

The nervous fluid at the time of the formation of the hot stage, extends itself throughout the system, and again acts upon its different parts ; this is to be seen in the functions, in issues, ulcers, &c. &c.

When it has regained its natural equilibrium through every part of the system, the stricture of the excretory ducts of the skin are relaxed, because of their receiving a necessary support, from their proper quantum of nervous energy. Upon this the perspiration commences, not universally, over the whole surface ; but, as the head is the greatest reservoir of the nervous fluid, and receives a much larger proportion of blood than any other part, it is on the surface of this, that the excretory ducts first receive their proportion of nervous fluid, and relax their strictures. Perspiration then commences, and forms the third, or sweating stage. This stage is a natural consequence of excessive action in the arterial system ; and by it we may judge something concerning the perfection of equilibrium gained in the system, and the steadiness with which the nervous fluid holds its balance. If the perspiration is extended over the whole surface, is fluid, warm and plentiful, continues from two to four hours, and gradually declines as the skin cools ; the skin soft and pliable, and naturally sensible ; the functions all returning to their natural state ; and relief of pain and anxiety ; we know the nervous fluid or energy, to have gained its healthy or perfect equilibrium. But, on the contrary, if the perspiration is partial in its extent, cold and clammy, continuing but a short time, is checked suddenly, with an imperfect relaxation of the skin, and

this still hot and disposed to be dry, pain not relieved, and the functions imperfect in their action, we may be certain of a return of the same, or a worse set of symptoms, in a short time, until a balance is restored to every part.

In this disease, the nervous fluid regains its equilibrium of action, and all the symptoms disappear; but we must recollect, that the effects of excessive action are now added to the former derangement and debility of the system, which give to the cause of irritation an increase of power; or, in other words, an indurated collection in the colon, will now produce a greater effect, and, by its irritation, more certainly destroy the balance of the nervous fluid, so recently gained, and still not established.

When the routine of symptoms appears in the foregoing form, it constitutes what is known by the name of "*fever and ague*," or *febris intermittens*. But many times, the nervous fluid cannot regain its wanted equilibrium so speedily; the cause of irritation in this case, has most probably acquired more virulence, and acts with greater force, so as to prevent the establishment of an equality, by calling back the nervous energy from the surface, before it has extended its power sufficiently far to relax the excretories of the skin perfectly, and restore natural action to other functions. The cause of irritation from longer continuance, and very frequently from the putrid fermentation, acquires a virulence sufficient, not only to prevent an equilibrium, but also to change the symptoms; we then do not find a distinct cold stage; chills alternating with flushes of heat, continue for some short time, and are succeeded by intense heat, violent pain in the back and head, thirst, nausea, vomiting, et cetera. This state of things continues for a longer or shorter time; sometimes for a few hours, and again for three days, when the symptoms abate, and partial moisture appears on the surface; or, in other words, when the nervous fluid has approached to, or regained an imperfect balance, or power over its domain, the skin is relaxed, and every internal commotion abates. But, before its government is regulated and established, another rebellion breaks out in the interior, from the colon, and calls it back in full force. This is what we call *remitting fever*.

Certain circumstances, peculiar to constitutional action, the effect of the atmospheric diathesis, diet and habits of living, more or less tend to assist or prevent a renovation of the nervous equilibrium. When all these combine against the restoration of an equality of nervous action, the nervous fluid, or vital power, is kept vacillating between two points, not sufficiently distant to make an observable alteration in the symptoms for some length of time. Under this form, it is a *continued fever*. Whe-

ther a fever ever existed, strictly entitled to the appellation *continued*, is extremely doubtful; the laws of the animal economy, and the very nature of things, forbid an incessant action of the system, without variation for any *length of time*.

We must now retrace our steps back, to an important point not settled. An intermittent has a cold stage, well defined; but other types have but a few symptoms of a cold stage, and are frequently seen without a symptom of the kind. When this is thought of, the reader may ask, if febrile action is a unit, and occasioned by the loss of equality, or equilibrium of the nervous fluid, why does not the cold stage attend upon every case, under whatever circumstances? I answer, in the first place, the sensation of cold is in a great measure a deception of the sense of feeling, and this being absent proves nothing, while the principal phenomena remain. When a "fever" is brought into action, by a loss of the natural balance of the nervous fluid, which does not centre immediately upon the heart, and overpower its action, the blood is driven into the capillary vessels of the skin, and renders it hot; still we see the excretory ducts constricted, and the patient experiences occasional chills, or tremors of the muscular fibres, immediately beneath the skin, because of the loss of their wonted proportion of nervous fluid to support and steady their action. From this we see, that in cases where the sanguiferous system is excited into an increased action, upon the first vacillation of the nervous fluid from its healthy, or natural balance of action, there is no well-marked cold stage. In such cases, the heart does not bear the whole weight of nervous plethora, the head, lungs and abdominal viscera are implicated; the liver is apt to bear a large proportion. We perceive, then, the heart would have freedom of action sufficient to fill the capillary vessels of the skin, the blood in which, proves quite a support to its muscular fibres, and assists to prevent their tremors, upon which depends the sensation of cold.

Whatever may be the peculiarities of a case, they all depend upon the manner in which the nervous equilibrium is destroyed, and upon certain internal and external circumstances, which modify its action towards regaining its natural balance. For instance, when an equality, or universally distributed, well proportioned action, is lost, the surface is mostly (not in every case now on record) negative, or possessing an under proportion, and the centre an over, or greater proportion, which I shall call positive. In this state, the liver, if it bear a greater proportion or share than its vessels can well endure, will most certainly show itself in external symptoms. Again, the same thing takes place with the stomach, spleen, brain, et cetera. To all these variations

we have specific names, as if they were indeed distinct and perfect in their kind.

Rush, in his "Outlines," enumerates no less than thirty-seven different "states of fever." Upon these, I shall make some remarks, to prove still further the facility with which every phenomenon of health and disease is explained upon the principles of *this theory*.

The first "*state of fever*," mentioned by Rush, is the *malignant, or putrid*. This sometimes comes on with a depressed, slow or intermitting pulse, coma, absence of all pain, and consequently insensibility to any tremors in the muscular fibre, or cold chills. In this case, the heart and brain are almost overpowered; the nervous fluid falls upon them with such excess of force, as to cripple their very stamina of action. The muscular fibre of the heart is so irritable, or sensible to the stimulus of the blood, and of distension, that it becomes irregular in its action, and often affected with momentary spasm, and at each contraction throwing so small a quantity of blood into the arteries, that the pulse appears weak and small, because the jet is not sufficient to fill the arteries. Here it must be recollected, that the arterial system is not much affected, and the muscular fibres of the arteries are not more contracted than usual, of course the calibre remains in its natural state.

Coma is, in part, the consequence of the peculiar state of the brain before mentioned, and, probably, in part, of the congested state of its sinuses, occasioned by the impediment given by the heart to the circulation of the blood. This state of things explains the other symptoms, such as absence of pain, chills, depression of strength, et cetera.

We sometimes see this "form of fever," coming on with great dejection of mind, almost an incredible loss of muscular strength, violent throbbing pains in the head, back, and extremities, the eyes often inflamed, bowels costive, pulse quick, small and hard, with rigors, heat, load, pain and oppression at the pit of the stomach, et cetera.

The principles of this theory, point out this case to be less hazardous than the preceding. Nervous plethora is less centred, the whole thoracic, and part of the abdominal viscera, bear their proportion with the head; the arteries are affected, as may be seen by the pulse; the proportion of blood thrown by the heart at each contraction is probably somewhat greater; but it is the contraction of the arteries upon the blood, which gives hardness to the pulse, which it would not possess if they were large enough to transmit three times the quantity of blood. The brain not being oppressed below the point of sensation, or capability

of receiving impressions, pain and rigors (which are necessarily present in this state of the nervous fluid) are perceived and complained of.

Again, we occasionally find in the foregoing cases, an unnatural distribution of action in the arteries; the pulse in one arm is strong and hard, while that in the other is weak and small. The action of the heart may be in unison with either; if with the weak and small pulse, a different state of nervous action upon the arteries of the opposite side, being greater or less, will account for this phenomenon.

Contrary to some assertions, I believe no man ever has, or will discover a pulse in an artery, distinct and separate from that of the heart, in point of time and repetition; a distinct and independent degree of strength we not unfrequently see; but in a given number of pulsations, I have never observed the heart and the arteries to vary in point of time.

From some innate or accidental debility in the muscular fibre, in arteries of a certain part, or perhaps in one whole side, excessive action may run down, or destroy their *vis insita*, while those of another part still keep in action.

It is not uncommon in "*malignant or putrid fevers*," that there suddenly arises a violent pain in some point or spot, very commonly in the head, sometimes in the thorax, abdomen, and other parts. This shows a dangerous irregularity in the action of the nervous fluid, which begins to concentrate upon parts, having almost lost its power to make regular advances towards an equilibrium; in which, if it fails, the case must terminate fatally.

It may not be improper in this place, to mention that species of mortification, which arises suddenly, with an excruciating pain in the foot or toes, from an unknown cause. This, from analogy, I believe to be the effect of the nervous fluid, centering upon a part, with sufficient violence to destroy its organization. In this case, there does not appear to be a general loss of balance, but that of a part; the cause of this is not evident, but quite probable.

We will now pass to another "form of fever." "*The fainting state of fever*," is but an occasional symptom, arising from the violent impression of the nervous fluid upon the heart, impairing or entirely suspending its action for a time, producing syncope, and some other symptoms of a similar nature. This is apt to occur in the plague, yellow fever, and small pox, and universally may be considered as one of the most dangerous symptoms. It always appears in the beginning of the disease, and unless some means are taken to relieve the heart, the pa-

tient is very shortly in imminent danger. These means may be of two kinds; first, the quantity of blood may be reduced, and thus in a measure free the heart from its irritation, until its fibres relax, and admit of a renovated and increased action; and likewise counter-irritation, tending to call off and reduce the nervous plethora of the heart.

“*The intestinal state of fever.*” Under this head, Dr. Rush has included cholera morbus and dysentery, which are always attended with some disturbance of the arterial system; and likewise diarrhœa and colic, which are commonly considered as belonging to a different class of diseases. They are all, however, occasioned by a loss of balance in the nervous fluid, and its peculiar manner of attack upon the intestines. In the cholera and colic, it principally affects the muscular fibre, in dysentery the arteries, and in diarrhœa the exhalants of the intestines. In cholera morbus and dysentery, the sanguiferous system is implicated, and very frequently sustains the principal weight of disease. The two latter arise from a less disturbed state of the nervous fluid, which has not wholly lost its equilibrium, but affects these parts from some casual debility.

When a patient is thus circumstanced, if in any way, as by accident, he loses a large quantity of blood, the nervous fluid at once centres upon the sanguiferous system, and produces the whole routine of phenomena, which we combine, and call “fever.”

“*The eruptive state of fever.*” By whatever cause the nervous system is disturbed, and its balance lost, the nervous fluid will, to a certain extent, fall upon that part, which is most central between the two great nervous reservoirs, viz. the brain and great sympathetic. The heart occupies this station; the sanguiferous system is consequently affected, before the cause (which is peculiar in its nature, and by some law of the animal economy) is thrown upon the skin, and produces eruptions. Here the nervous fluid is called forth, in part to the skin, through the arterial system, leaving the muscles, membranes, veins, and more or less of the abdominal viscera deficient of their natural proportion. In the last stages of some malignant cases, as of “yellow fever,” and “spotted fever,” the whole power and action of the nervous fluid centres upon the muscular system, leaving every other part of the body in a negative state. This most frequently is its *dernier resort*; very seldom indeed do patients recover, after displaying that astonishing degree of strength we sometimes see in cases of “yellow fever.”

In some few instances on record, it appears as if the cause producing eruptive diseases acted immediately upon the skin,

without destroying or much disturbing the balance of nervous action; rubeola and variola, have appeared in a benign and distinct form, without one symptom of febrile action, or in any degree affecting the chylopoetic viscera.

Several cases of measles of this kind have come under my immediate inspection. Some cases of the same character of small pox I have read, but the author I cannot certainly point out. The plague frequently appears in so mild a form, that the patients do not forsake their usual avocations.

“The rheumatic state of fever.” To give my reader an opportunity of thoroughly understanding my views upon this point, it will be necessary to anatomize the muscular system in part, and discover the peculiar manner of action in the fibres of those affected with rheumatism.

When we examine the structure of a muscle, we find it composed of two distinct sets of fibres, the one soft, red, sensible and irritable, the other of a white glistening color, firm, insensible, without irritability, or power of contraction.

The soft and red, or fleshy fibres, are disposed in fasciculi, principally composing the body, or belly of a muscle; and upon these depends the power of motion. These fasciculi, derive their red color from the blood, (as may be proved by maceration,) which must necessarily be carried by arteries; from this it appears evident, that there exists in the body of a muscle innumerable arterial branches, subject to be disturbed in their action, from a variety of causes. The white silvery fibres extend themselves beyond the fleshy, and form the tendon or aponeurosis. The fasciculi forming a muscle, are not simultaneously called into action by the will. The central, or those lying rectilinear, between the origin and insertion of a muscle, are first in action, and the last to rest. Hence we find, that when a muscle is greatly fatigued in one state of contraction, it may be relieved by changing this, either for a greater or less. These central fibres are most fatigued after exertion, and consequently the most irritable, debilitated, and liable to receive violent impressions from the nervous fluid. If, then, when the body is heated, it is suddenly exposed to cold, especially if accompanied with moisture, the balance of the nervous fluid is partially lost, the blood retreats from the capillaries of the skin, to the internal vessels; the debilitated, weak and irritable state of the fasciculi before mentioned, attracts the nervous energy, and with this, the blood.

The vital fluid then exists in a super-natural quantity in these fasciculi, and keeps up an increased action in their arteries, which gives rise to inflammation, redness of the exterior, pain,

et cetera. The greatest pain, however, is caused by the peculiar action of the nervous fluid itself, which changes its site occasionally, as we perceive by the pain.

It is more than probable, that pain is also produced by spasm, an irregular contraction of the muscular fibre, under the excitement of the nervous fluid.

When the loss of balance is considerable or complete, the vital fluid is also thrown upon the sanguiferous system, and excites a "fever." Although the symptoms may, and do indicate venesection, the peculiar state of the vital fluid, being in a manner divided between the muscles implicated, and the arterial system, will not safely admit it to be carried far, before the nervous fluid is called from the muscle to some internal part, rendered weak and irritable, through previous evacuations. This has been considered a metastasis, according to the opinions of some; what would be the impropriety in using a surgical term, and call it a *dislocation*?

The chronic form generally succeeds the acute, which leaves the membranes and fasciculi in a debilitated state, for ever after liable on the slightest disturbance of the nervous fluid, to be attacked in a similar manner. That change in our atmosphere, which immediately precedes wet weather, disturbs the balance of the nervous fluid, occasioning pains in different parts of the system, and especially in the part before affected.

Hypochondriasis is a disease, in which we observe the patient to grow restless at the approach of a storm, and complain of all manner of pains. The abuse of mercury sometimes leaves the system in this precarious situation, which most commonly remains for a long course of years, if not for life.

Epilepsy is a marked case of disease, arising from a sudden loss of balance in the nervous fluid, attacking and concentrating upon the brain and muscular system. The vital fluid more easily loses its equilibrium when in an inactive state, than at other times. Thus we see epilepsy most frequently makes its attack, when the body is in the torpor of sleep. This, however, is not a single instance, as my reader will observe that all diseases most frequently lose their state of predisposition, and become *positive* during the night.

It is an old remark, that patients in "fevers," are always worse at night; this arises from habit, or a natural association of motions in the vital principle, still inclined to follow its natural healthy order, rest and vacillation.

"*The burning state of fever,*" *causus* of authors, or "*yellow fever.*" This fever has been previously spoken of, but I must introduce it to the notice of my reader in this place, by detailing

the minutiae connected with its theory. This disease has never appeared among us, except in hot seasons, which are undoubtedly necessary to produce it.

The heat of summer relaxes the solids, rarefies the fluids, and induces morbid action in the chylopoetic viscera; the whole system is debilitated, but more especially the liver, stomach and intestines; the colon becomes inactive, and its cells blocked up with indurated feces, which produce more or less irritation, according to the extent of prior debility and predisposition.

The atmospherical diathesis disposes the system to a low, malignant, sub-acute species of inflammation, as we see in dysentery, cynanche maligna, and often in other diseases. The feces in the cells of the colon become putrescent or putrid, and taken up by the absorbents, vitiate the blood, and thereby every fluid in the system. If in this state of the body, an active miasma be applied in a concentrated form, it at once destroys the balance of the nervous fluid, which centers upon the stomach, liver, duodenum, and sanguiferous system.

The miasma is here considered as a remote or procatactic cause, although it completes the obstruction of the nervous equilibrium, because the same miasma* will not produce the same disease under other circumstances. The *blockade* of the *colon*, and the putrid state of its contents, in conjunction with the diathesis of the atmosphere, is considered as the immediate or essential cause, for the reason of the disease never being produced without this state. The heart and arterial system, the stomach, liver, intestines, (particularly that portion immediately connected with the stomach,) occasionally the lungs and brain, are to be considered as the seat of nervous plethora. As the great seat of disturbance and irritation is situated in the colon, some may think this should consequently be the part most affected; but let me ask, does there not exist a law within the system, regulating, according to circumstances, the effects of certain impressions? Thus, irritation arising from crudities in the stomach, produces pain in the head; a stone in the bladder, not acknowledged by the sense of feeling, produces pain and itching in the glans penis; irritation in the intestines often produces its whole effect in the eyes, in the form of an obstinate ophthalmia. In morbus coxarius, the pain is often wholly confined to the knee. Acid in the stomach and intestines fre-

* See Cleghorn on West India Fevers.

quently produces violent toothach; and thus, in many more instances, we find the cause at a distance, and, in some cases, apparently entirely unconnected. By this we see it is no new idea, that an impression should be made on one part, and its effects fall upon another.

According to this theory, cases that occur suddenly when the body and mind are both actively employed, will prove the worst; for at that time the nervous balance is much more secure, than when at rest after a day's fatigue.

There has been of late much said about the peculiarity of the yellow fever, in being cut short by a reduction of temperature. Analogy has led me to believe the change to be in the system, and atmospheric diathesis, rather than in the miasma, infection, effluvia, contagion, or by whatever name it may be known. It would be an advantage to have an impartial detail of succeeding diseases, for a few months.

"The typhus state of fever," or *"nervous fever."* This generally appears in the fall, winter and spring months; its procatactic or remote causes, are cold and moisture, which more certainly act as a sedative upon the nervous system, when the body is not well protected by warm clothing, or is debilitated from excessive evacuations, grief, or the want of a nutritious diet. It is known by a frequent, weak and small pulse, a disposition to sleep, tremors of the hands, and dry tongue.

This disease, in nine out of ten cases, is not one of absolute debility. There is a great depression of muscular strength, because of the deficiency of the nervous fluid in the muscular system. There is a torpor, or disposition to sleep, because of the same deficiency in the brain. The pulse is weak and small, because of a change in the quality of action in the heart and arteries, which, in different cases, depends upon a feeble, and then upon an overpowering action of the nervous fluid. The principal seat of nervous plethora, however, is in the membranes.

A sub-acute inflammation is often discovered in the membranes of the stomach, intestines, brain, and other membranes throughout the body. It does not appear to affect the muscular coat of the intestines, (or at least they are not increased in action,) for they are almost universally torpid, and especially the colon, in whose cells lies the immediate or essential cause of the disease.

That this "fever" is not always from a feeble stimulus of the nervous fluid, I argue, from the facts, that depletion sometimes raises the pulse from a weak and feeble state, to a full, round and firm action. The whole case is then changed—the

heart is freed of its load, and acts with all the energy seen in an active inflammation ; pains become more common, the patient is roused from his torpor, the seat of nervous plethora is changed, and gives us an "inflammatory bilious fever." Dr. Rush observes, that, "from the accession of new stimuli, or an increase in the force of former ones, this typhus state of fever sometimes assumes on the eleventh, fourteenth, and even twentieth days, symptoms of synorcha."* Although venesection cannot be said to be a stimulus, nor does it "increase the force of former stimuli," yet it relieves the heart from that pressure of blood, which, by its irritation upon the fibres of the heart, already under a powerful stimulus, and preternaturally sensible, induces such a state of contraction, that it will not transmit blood sufficient to fill the arteries. When this state is relieved, the heart regains its freedom of action, and acquires more or less violence, according to the state of the nervous fluid. I do not, however, deny but in many cases there is a deficiency of action in the sanguiferous system ; for it must consequently attain when the nervous plethora is exclusively seated in the membranes. To distinguish between these two forms, which is absolutely necessary to the safety of the patient, we must look back to the history of the case. If the attack has been sudden, with chills and rigors, heat, pain and oppression in the chest, a cool, pale surface, the stroke of the heart quick, and an enlarged state of the external jugular and other veins about the neck, we may venture to bleed. The blood once started, symptoms will soon arise, pointing out its propriety. If venesection is not employed, and the patient is not speedily cut off, the *vis insita* of the heart at last gives way, and the sanguiferous system declines into absolute debility. If by chance a patient recovers under such management, he may be more obliged to a good constitution, than to the treatment.

I have been prohibited, by the necessary limits of this article, from remarking upon each individual "state of fever," with respect to treatment. I shall now make my remarks promiscuously, upon the *modus operandi* of remedies applied under different circumstances, in different diseases.

Previously, however, to the consideration of other subjects, we will draw our indications in "fevers," (and many other diseases,) upon general grounds ; we can then explain the *modus operandi* of remedial agents, and see how near these indications are fulfilled in common practice. Our indications are :—

* See Rush, Med. In., vol. 3, p. 48.

1st. To remove every cause of irritation from the body.

2d. To restore an equality of action, or an equilibrium to the nervous fluid.

These indications may be variously divided and subdivided ; but we shall not enter into needless minutiae on a point so perspicuous.

First,—*To remove and obviate irritation.* Irritations are properly divided into two classes :—

1st. Those of the mind, and

2d. Those of the body.

The first subdivision we shall pass, and consider the second, or those irritants which may be removed by medicine.

We very commonly commence the treatment of “ fever ” by an emetic or cathartic, to cleanse the stomach and intestines ; here we evacuate a cause of irritation. The blood, in cases of violent action of the sanguiferous system, is an irritant to the heart ; by diminishing its quantity, we reduce irritation ; and by allaying pain, we remove the same morbid state. These causes are to be removed in our preparatory treatment.

The primæ viæ are the great seats of irritation, which is to be removed by frequent cathartics and enemata. Emetics may, in some cases, assist, and then their secondary effects are more beneficial than their primary.

When an obstruction of the ductus choledochus communis, from gall stones or spasm, appears evident, emetics may be used with good effect, but such as are used, should be gentle in operation.

Still further to fulfil the first indication, we direct the removal of ligatures, bands, and every thing that does not set perfectly easy upon the body. We avoid much external heat, light, noise, et cetera. In short, we remove or obviate every thing that may prove irritants to mind or body ; and in the same degree as we succeed in this, we fulfil the first and most important indication.

Second,—*To restore an equality of action, or an equilibrium to the nervous fluid.* The fulfilment of this indication is easy, when the first has been perfectly answered ; it is to be obtained by reducing all local inflammation, relaxing the skin, obviating any irregular determination of the blood, altering the action in organs whose functions are ill performed, and reducing the whole system to one state. When we have done this, there is no one point more irritable, sensible, or debilitated, than another ; consequently, there is no opposition to the nervous fluid in its resuming an equilibrium ; but where a part is much debi-

litated, inflamed, preternaturally sensible, or under the operation of irritants, the nervous fluid is continually called back from its advances towards gaining its natural balance.

When the vital energy has regained its natural state, balance, or universally diffused state of action, upon every part of the system, the functions all return gradually towards their healthy performance. At this time, however, the nervous fluid is in a vacillating uncertainty, and continually in danger from a concatenation of morbid action, or association of motion, to fall back and lose its balance, from slight causes. To prevent this, we exhibit tonics to condense and strengthen the muscular fibre, and thereby increase the tone of the whole system, and establish the security of the nervous fluid. Mercury acts upon the human system as a universal stimulant, and by this means restores a balance to the nervous fluid, by calling it equally to every part of the system. Emetics may be of benefit in unloading the stomach, but their effects upon the liver, large veins and skin, are far more beneficial; they may also help in diffusing nervous action, when too much concentrated upon the heart, as occurs in congestive typhus,* and in the spotted and yellow fevers. They are, however, prohibited by other circumstances in the two latter diseases.

Diaphoretics assist by throwing the circulation upon the skin, and thus tending to diffuse nervous action, and also relieve an irritation, by relaxing the skin. Cathartics and enemata relieve from the great body of irritation, by evacuating offensive matter from the intestines, which, if not thrown off, renders an otherwise simple case obstinate, dangerous, and, perhaps, malignant.

Alteratives change morbid action, induce a healthy one, and thereby relieve a part from the continual and increased action of the nervous fluid.

This is likewise the benefit of diuretics, which also carry off a portion of any impurity of the blood. I say, *impurity of the blood*. We have, in my opinion, too inconsiderately forsaken every idea of the humoral pathologists. What effect would be produced, indeed is produced, where the kidneys refuse to act? I believe an alteration in this secretion very often renders cases more malignant than would otherwise be the fact.

Bleeding assists sometimes by relieving irritation, and again by rendering the body sensible to other impressions; and in

* See Armstrong on Typhus.

calling the nervous action from the brain, muscles and membranes, to the sanguiferous system.

Blisters are serviceable as counter-irritants, in calling the nervous fluid from some positive point to a negative.

To the consideration of this imperfect and hasty sketch, I shall leave my reader for the present, and record my perfect satisfaction, should he obtain but one new idea of importance to the welfare of the human family, from the labors of my pen ;—nay, it is happiness itself, to consider ourselves able to alleviate one item of the miseries of mankind.

ART. V.—*Notes on the Epidemic Erysipelas which prevailed in the provinces of New-Brunswick and Nova Scotia. Communicated to WILLIAM BAYARD, M. D. of New-York. By ROBERT BAYARD, M. D. D. C. L., of St. Johns, New-Brunswick.*

THE disease commenced early in the fall, although the weather had not been remarkable for any peculiar humidity or dryness. It attacked all ages, sexes, and constitutions, indiscriminately, and was prevalent as well among the upper as the lower orders, with those who enjoyed the comforts of life, and occurred in various exposures and localities. It showed itself first in my family, in a child of five years of age, who complained first of vomiting, great thirst, and the usual symptoms of inflammation of the mucous membrane of the stomach ; her constant cry was for water, which was quickly rejected. The disease was treated upon the general principles of gastritis. Venesection copiously, cupping, warm bath, leeches, and blisters—all seemed unavailing, until a very copious bleeding, *ad diliquium*, from a large opening, losing 3i. after two previous venesections. This last subdued the disease, which manifested a removal, by the desire for water ceasing. The convalescence was rapid. I may observe, cathartics had little effect ; and the child took nearly three drops of oil of croton, before the bowels yielded. The oil was given after the thirst had abated. In two or three days after her recovery, her elder sister, aged six years, was taken sick, much in the same manner. Similar treatment was adopted, with the exception of the oil of croton ; but the bleedings were not carried to such an extent, because the sensation of thirst was not so urgent. The disease, however, was more obstinate,

and travelled upwards along the esophagus, attacking the schneiderian membrane, and was reflected from the internal nostril, upon the outer surface, extending itself gradually over the face, neck, head and thorax.

In one case (a child ten years old) the disease commenced in the stomach, passed up the esophagus, pervaded the internal fauces, was reflected upon the face, caused gangrene internally and externally of one half the face, involving one eye, half the nose, the cheek and ear, and ultimately producing death.

In another case, a man of previous intemperate habits was attacked on the arm. In forty-eight hours, general gangrene of the extremity supervened, the entire cellular membrane was disorganized, and death followed in twenty-four hours after the commencement of gangrene.

A young woman injured her finger with a herring bone; erysipelas supervened. The disease involved the arm, and pectoral muscles. The extremities of all the fingers were lost from gangrene, while deep abscesses formed at the same time on the back of the hand, wrist, elbow, axilla, and beneath the pectoral muscles. She recovered.

A blacksmith, of temperate habits, was attacked with the disease in the knee. Tumefaction took place, elevating the patella. An incision was made in forty-eight hours after the tumefaction; large collections of pus were discharged from each side; it insinuated itself beneath the extensor muscles of the thigh. Similar abscesses were formed over the acetabulum, and under the pectoral muscles. The fauces were also affected with inflammatory erysipelas. This man after some weeks recovered.

A laboring Irishman, in the poor house, complained of the usual symptoms of erysipelas; and, notwithstanding copious depletions, suppurations eventually took place in almost every joint, in the wrists, fingers, shoulders, hips, knees, ancles, with extensive insinuations along the muscles of the legs, and the longissimi of the back. He died; and the matter, in many parts, lay within the capsular coverings of the joint.

Puerperal women were peculiarly liable to the disease; and it was very fatal to many. In one case after death, the disease presented very general ravages; the whole intestinal canal was flushed with inflammation, which, in some parts, had terminated in gangrene. In one case, the peritoneal covering of the uterus and bladder was completely injected; whilst, at the same time, the ovarium was entirely disorganized with gangrene.

I have frequently seen the orifice of a vein, when opened, form the nucleus of erysipelas. In one man whom I bled, the next

day the orifice became erysipelatous, and a cicatrix on the opposite arm, which had been bled some months before, puffed up, and assumed the disease.

When the erysipelas first made its appearance in this city, it exhibited a prevailing tendency to terminate in gangrene. During this period, it was very fatal. After a few months, it varied its termination, and run rapidly in deep abscesses, characterized with very little swelling. The previous existence of pain was a sufficient authority after three or four days duration, to plunge the lancet deeply into the affected part, and evacuate matter. I have plunged it into the knee, the pectoral muscle, the gluteus, &c., when there has been but little apparent tumefaction, and incredible quantities of matter have been discharged. Such determined and seasonable openings, I considered, as having alone saved my patients. I have discharged upwards of twenty ounces of pus from beneath the pectoral muscles, where there had been but little general swelling, and no redness indicating any disposition to point outwards.

The matter insinuated and undermined parts, without showing any tendency to point externally. I did not consider the disease contagious, although whole families would be attacked with it. It seemed to depend upon some unknown peculiarities in the atmosphere, occasioning a morbid action upon the skin, vitiating, by consent, the biliary secretions, and thus ultimately deranging the digestive functions, and causing membranous inflammation. In suppurations of the knee, I have passed the probe beneath the patella, from one side of the knee to the other, and upwards some distance, under the extensor muscles. The patients recovered, but the joints were stiff. The disease assumed a variety of attacks, from a mild to a very malignant form.

The treatment was modified by circumstances, and the part affected. I generally found evacuants, and most determined bleedings, to succeed. If the stomach was not affected, and the disease was external, a gentle emetic, moderate aperients, and venesection, sufficed. In one puerperal patient, the disease appeared on the face, head, and breast, the day after labor; I bled her; and after some days she convalesced, and, contrary to orders, ate freely of meat. In a few hours the disease returned. I gave an emetic, with relief. But small abscesses between the membranes of the eyelids were formed and opened.

When the disease manifested inflammation of the mucous membrane of the stomach, internal remedies seemed hurtful. In this case, most determined bleedings answered; the quantity drawn was regulated by the effect, viz. the cessation of thirst; afterwards mild diluents, and gentle aperients, were serviceable.

Early openings after the patient complained of deep seated local pain, unaccompanied with external redness, were indispensably requisite. The absence of swelling was no guide, contra-indicating the opening. I have known decided internal erysipelas without any external redness; and extensive suppurations, with little or no swelling, and no other cause to suspect matter, than the prevalence of the epidemic.

Mild mercurials, when the stomach would allow, with a view to correct the bilious secretions, were serviceable. Fomentations over the region of the liver, and the antimonial ointment with mercury, with the same intention, were useful co-adjutors.

Bark and wine, which have been advised in ordinary erysipelas, were used by some, but always with injury.

Blisters were serviceable in some cases; not so much from any curative property, as from their causing cutaneous irritation, and becoming the seat of cutaneous erysipelas.

The disease continued to prevail first under a gangrenous for three or four months, and subsequently under a suppurative character for eighteen months. I have met with occasional mild attacks of the suppurative disease, for two years from its first appearance. It was principally fatal among the poor, and child-bed women; with the latter of whom I found bleedings and the warm bath, and large poultices over the bowels, generally successful. I have kept child-bed women in a hip bath for several hours during the day. The bath was kept warm by the bed, and the order was, to get in as often as the pain was urgent upon pressure, and to remain in as long as they could.

This disease prevailed throughout Nova Scotia, and this Province. Occurring as well upon high and elevated situations, as in low and marshy exposures; as well in the formerly salubrious airs of the country, as in the dense and unwholesome confinements of city; and it was equally frequent in hospital and private practice.

ART. VI.—*Notice of Communications made to the Royal Academy of Medicine of Paris, on the high operation for Stone in the Bladder, by M. AMUSSAT.* By CHARLES CLEEVE, M. D. of New-York.

[IN our last number, we had the gratification of laying before our readers, the history of the first case of Lithontripty performed in this country. The profession in the United States are

certainly indebted to our able *collaborateur*, Dr. Depeyre, for the successful introduction of this operation ; but while we are pleased in reporting that success, we must still observe, that much more evidence than we yet possess, is necessary to arrive at any just conclusion, on the subject.

The communications now laid before the readers of this Journal, have an intimate connexion with the operation of Civiale, inasmuch, as their object is not only for the purpose of elucidating the high operation of Amussat, but also to point out such cases, in which the stone is to be broken down in the bladder. To give our readers, particularly those at a distance, an opportunity to become acquainted with all the facts connected with these several modes of operating, we place these summaries on our pages, believing that they will be perused with some interest. Comparatively, but little notice has been taken of these operations in this country ; but the case of Dr. Depeyre, in this city, and the intended introduction of Civiale's method in Philadelphia, by a gentleman, who, we understand, has made himself familiar with the operation, during a recent visit to France, have given a new excitement to the subject, that requires a diffusion of that information, which, in this, as in every other instance, we shall feel a pleasure in being the medium of communicating. EDS.]

COMMUNICATION FIRST.

M. Amussat said, that he wished to relate to the meeting, several facts relative to the operations which ought now to be employed, for the purpose of destroying, or extracting, calculi contained in the bladder.

He thinks it possible in a great measure to point out, in a general manner, the cases in which we must endeavor to break down the stone in the bladder, and those in which it is necessary to have recourse to the operation of lithotomy.

Whenever the subject is too young, or rather when the urethra will not admit of the introduction of the instrument, we must cut.

We ought never to attempt to break down a voluminous stone.

Whenever the *bladder*, the prostate, or the kidneys, are diseased, or when a chronic affection of some organ, important to life, such as the heart or lungs, exists, it is dangerous to have recourse to the new lithotomy.

Old men, who have long been affected with the stone.

and whose urine is constantly charged with glare, are in very unfavorable conditions for this kind of operation.

All these propositions are founded on facts. In short, breaking down the stone, (*le broiement*,) is only admissible, with every favorable chance of success—in cases where the patient enjoys a general good state of health, and supports tolerably well the presence of the stone. In all other cases, M. Amussat thinks, that we ought to operate above the pubis.

He says, “that the method he employs to get down to the bladder, by the hypogastrium, is very simple, and would be easily understood and performed, by those who have an exact knowledge of the *true form* of the bladder, and of its constant position.” He thinks, that the dread of opening the peritoneum, will prevent many surgeons, accustomed to operate by the perineum, from trying his method; but he entreats them to divest themselves from the force of habit, and to perform this operation on the dead body, without prejudice. Doubtless, says he, those who have attempted this operation with the dagger sound, (*la sonde à dard*,) and who have rarely been able to avoid wounding the peritoneum, would not run the risk of penetrating into the bladder, without a conductor. He urges them to examine again the position of this organ, and to convince themselves, that one may always with certainty open the bladder *behind* the symphysis, without any other guide than a finger, to explore, and conduct the bistoury. He says, that with the dagger sound, we exactly do that (as he has often observed on the subject, in the course of his operations) which we wish to avoid; because the back of the sound goes beyond the fold which the peritoneum makes, behind the superior edge of the symphysis; and he adds, that we must be well accustomed to the use of the sound, to prevent it from going beyond the point where the peritoneum is reflected from the bladder.

He says, that he has proved, by his anatomical researches on the urethra, that the injudicious manner of preparing the bladder and rectum, to ascertain the direction of the urinary canal, had led people into error, and retarded the progress of surgery, with respect to the use of the catheter, and the necessity of destroying the stone in the bladder. He adds, that the same idea induced the demonstration, that a bladder, filled with *air*, has another form, and another position, than the same bladder filled with a fluid. And it is upon these *new* anatomico-chirurgical remarks, that he has founded his *new* method of operating *above the pubis*.

He observes, that the empty bladder is concealed behind the ossa pubis, where it fills exactly the cavity formed between them.

In this state it assumes the form of a flattened cone, the base of which is below, and the apex above its posterior parietes touches the anterior, and behind it offers a concavity similar to that of the os-pubis; this disposition is determined by the peritoneum, and by the pressure of the small intestines.

The apex of the bladder never rises above the superior part of the os-pubis, so that its anterior face is applied to the whole extent of symphysis.

Its conical, or rather triangular form, is determined by the urachus and the ureters. To be assured, that the bladder does not entirely double upon itself, as with the beasts, it will suffice to cut the symphysis of an unopened body. By this simple examination, we may be convinced, that this happy disposition of the bladder in man, favors in a singular manner the operation *above the pubis*. M. Amussat divides this operation into six principal stages. In the first stage, he introduces tepid water into the bladder, to give it a consistency. It is not necessary, says he, to distend it, as was the custom before the time of Frère Côme. We may be contented by rejecting the quantity of fluid, which it habitually contains, even in cases where the patient is frequently tormented by the desire of micturating; an assistant holds the penis to prevent the escape of the fluid.

In the second stage, he makes an incision through the skin above the pubis, in the course of the linea alba, to the extent of the width of three fingers; then instead of dividing the linea alba the whole length of the incision made in the skin and cellular substance, he is satisfied in opening it to the os-pubis in such a manner, as to introduce the finger only.

The third stage consists in plunging the bistoury into the bladder, guided by the index of the left hand, and to let the finger take the place of the bistoury; as soon as it has penetrated into the bladder, the finger is bent in the form of a hook, so as to suspend that organ.

In the fourth stage, we examine the bladder with the finger, enlarge the opening of the linea alba, and that of the bladder if thought necessary, then we seize the stone with the forceps, and extract it, at the same time withdrawing the finger.

The introduction of a thick bent canula into the bladder, close to the lower part of the wound, for the purpose of suffering the urine to escape, constitutes the fifth stage.

The sixth consists in uniting by the first intention, all that portion of the wound which is above the canula; for which purpose, he makes use of adhesive straps, graduated compresses, and a body bandage.

M. Amussat states, that, having been to Poitiers in the month

of last October, to perform a single operation of this kind. That he there performed five, besides a tolerable number of serious cases, of which hereafter he intends giving an account to the Academy. Of the five patients, on whom he operated by the hypogastrum, and with whom the breaking down was impracticable, three of them were old men, and the other two very young children. *All* these patients were perfectly cured, although they were in unfavorable conditions.

The first was a physician of Neuville, aged sixty-five years, of a strong constitution, but exhausted with pain; the stone had brought on catarrhus vesicæ.

M. Limansineau (the name of the patient) wished very much to avert the operation, but the volume of the stone, and the state of his bladder, contra-indicated every idea of *broiement*. The high operation was performed the 29th October, 1827, in the presence of a great number of physicians. A large stone, of the form and size of a kidney, situated transversely, was raised by the finger, and extracted in the manner M. Amussat pointed out in one of his preceding communications. After the extraction of the calculus, the operator, in examining the bladder with the finger, discovered near to the neck, a small tubercle, which he excised with a pair of long bent scissors, in form of forceps, and guarded, (*boutonnés*) at the point. M. Amussat invented them for cutting off excrescences from the bladder, and polypi in the uterus. This instrument was submitted to the inspection of the meeting.

A bent canula was afterwards introduced into the bladder, through the incision above the pubis, which incision was united by the first intention above the canula. On the 5th day, the dressing was removed; there remained nothing but the sinus, which gave passage to the canula. On the 8th day, a smaller canula was substituted for the large one; on the 10th, it was withdrawn. During the night of the 12th and 13th, the urine commenced to flow, (with pain,) by the natural passage. The 22d day, the wound was completely cicatrized; the 23d, the patient returned home, three leagues from Poitiers.

The second patient was M. Bodin, president of the Royal Court at Poitiers, aged 69 years. For a long time, he had walked with difficulty; his urine was constantly charged with glare. Some attempts made to dilate the canal, having induced fever, rendered the glare more thick, greenish, and adherent to the bottom of the vessel; and thus the employment of lithontripty was deemed hopeless.

On the 29th, the high operation was performed. Four calculi, the size of walnuts, were extracted; they were contained

in a sort of pouch, (*cul-de-sac*,) which accounts for the difficulty so often experienced in ascertaining the presence of the stone. Every thing went on with this patient as with the last, except that the urine did not begin to be discharged by the urethra till the 15th day, nor did the cicatrix form before the 30th.

The calculi of Messrs. Bodin and Limansineau were composed of uric acid.

The third patient, M. Degennes, aged 76 years, had a most intense catarrhus vesicæ. The glare was mixed with blood. The patient generally was confined to bed. M. Amussat performed the high operation on the 5th November, 1827. A small flattened calculus, the size of a 20 *sous*, (quarter of a dollar,) was easily extracted; but there remained a second, much larger, which was encysted in the lower part, and which was with great difficulty felt by the finger. It was extremely friable, and thus could only be extracted by portions, which rendered the operation tedious and painful. The patient, after having been treated like the two preceding ones, was placed in bed; but he did not preserve the horizontal position. Naturally of an impatient temper, he moved a good deal, and the extremity of the canula irritating the parietes of the bladder, brought on fever. The urine became serous, which determined M. Amussat to withdraw the canula. The 7th, at evening, forty-eight hours after the operation, the wound was only cicatrized in the upper fourth. On the following days, the patient caused serious alarm. The wound remained open and soft, incessantly moistened by the urine; the edges continued pale. It remained in this state during the beginning of December, and the wound was not cicatrized until the early part of January. The second calculus of M. Degennes presented a nucleus of uric acid, with a very thick exterior coat of phosphate of lime.

The fourth patient was a child, aged four years, who had suffered for some time. He evinced every symptom of stone. On the 6th, the high operation was performed, and a very hard calculus of urate of ammonia, the size of a walnut, was extracted. The canula was placed in the bladder, and the wounds united by the first intention; but the child soon disarranged the dressing. The canula was withdrawn twenty-four hours after the operation; and from that time, all the febrile symptoms appeared as in the case of the old man of 76 years. The wound remained open, and was not cicatrized before the 27th day. The urine had begun to pass by the urethra on the 15th day.

The fifth patient was a child, aged two and a half years. He experienced violent pain in micturating. The sound proved

the presence of a strange body in the bladder. M. Amussat performed the high operation on this child the 14th November. The bladder being opened, and the finger introduced into its cavity, the operator had much difficulty in discovering a small pyramidal calculus, situated behind the neck of the bladder, which was encysted up to its summit. For the purpose of freeing it from the cell in which it was lodged, M. Amussat separated the fibres of the bladder, which embraced the calculus, with the nail of the left *index*. At the same time the index of the right hand was introduced into the rectum, and pressed upon the perineum. He pushed the calculus against the finger in the bladder. The calculus, released from its cell, was easily extracted with polypus forceps. Its size was that of a small filbert, and was composed of urate of ammonia and phosphate of lime. The canula having been placed in the bladder, and the wound united by the first intention, the little patient was confined in his bed in such a manner as to prevent his stirring. On the fifth day, cicatrization was complete up to the canula, which was then withdrawn. On the tenth, there was no more discharge by the wound.

After these five observations, we ought to be convinced of the utility of the *canula*, which constantly carries off the urine and mucosities; and which has the advantage, at the same time, of favoring the union by the first intention, and of producing around it (the canula) a sinus, which being organized from the first period, will prevent any accident from the passage of the urine, or extravasation of this destructive and truly caustic fluid.

All the physicians of Poitiers who witnessed these five operations, and who attended to them, are well convinced of the great importance of the *canula*. In fact, the two first patients, who were perfectly rational, and who preserved carefully the horizontal position, have gone on in the regular manner stated: the fistulous sinus around the canula had taken place the 7th day; the two patients were cured the 22d or 30th day, without the least *accident*. The two following patients in chronological order, viz., the old man of seventy-six, and the child of four years, who were restless, have presented almost all the phenomena observed in those, when the canula has not been used; in which case, (as M. Amussat says he has frequently observed,) the wound remains flaccid, a long while open, the lips pale, grayish, and, as it were, cauterized by the urine. With these patients the fever was very violent, and, for several days, caused serious apprehensions. The fifth patient, or the child of two and a half years old, who had been confined in bed, so as to

prevent him from moving, like the two first, has exhibited symptoms regular in their progress ; that is to say, the wound was united, by the first intention, above the canula, and the sinus formed around it was quickly closed, without its being necessary to introduce a catheter into the urethra, as was the case with the other four patients. The presence of the catheter in this case is very painful and useless.

Without having recourse to numerous facts, mentioned in works on lithotomy, and which tend to support his opinion, M. Amussat thinks that (from the five facts he has related) we may come to the conclusion, that the most important part, after the operation above the pubis, is to prevent the passage of urine by the wound ; and to prevent this destructive fluid remaining in so large a cellular space, which forms a deep sinus.

M. Amussat concludes in stating, that he believes he has rendered an important service, in demonstrating the possibility of sounding the urethra in man with a *straight* instrument, and in destroying the calculus in the bladder. But he is persuaded, that he has rendered a still more important service, in simplifying one of the most serious operations, and in obviating, by means of the canula, the accidents which have been so much dreaded in the high operation.

COMMUNICATION SECOND.

M. Amussat informed the meeting, that since he had the honor of presenting to them the cases of M. Chartier, aged 60, and young Gourlier, aged 12 years, on whom he operated above the pubis, and cured them of the stone, he has had but one opportunity more of performing this operation. He presents them with this new case.

OBSERVATIONS OF M. BUIN.

(*Extracted from the General Journal of Hospitals.*)

Lithotomy, above the pubis, practised by M. Amussat, with the important modifications which he has introduced in this operation. M. Buin, ancient chief of battalion of the marine artillery, aged 70 years, of a good constitution, had experienced for nearly two years much acute pain in the bladder and kidneys, when he applied in the month of November to a surgeon, who sounded him. Cathetrism, as the patient remarked, was very painful and difficult, and followed by a considerable discharge of blood by the urethra. The surgeon

declared, that lithontripty was impracticable, because the canal was constricted. A few days after, M. Buin requested M. Amussat to be called in consultation with his physician, Dr. Mareschal. He was found in the following state:—continual desire to urinate, especially during the night, which the patient generally passed without sleep; acute pain in the bladder, and in the track of the canal, at each emission of urine. The jet of this fluid was often interrupted. The urine deposited in the bottom of the vessel a thick coat of purulent mucosity. M. Buin was affected with inguinal hernia on the right side, besides umbilical hernia. M. Amussat performed catheterism with sufficient ease with a sound of the ordinary size, although the urethra was strictured in several points of its extent. As soon as he had introduced the instrument into the bladder, he felt a calculus placed in the bottom (*bas fond*) of that organ. He wished to inject some fluid into the bladder, but he could only inject a small quantity, which caused him to think that it had turned over on itself, and was much diseased. M. Buin, whose pains left him no repose, and who for several months could scarcely walk, entreated M. Amussat to operate. If, on the one hand, the bad state of the bladder, the strictures of the cord, and the nature of the calculus, which he believed to be large, deprived that surgeon of all hopes of succeeding with lithontripty; on the other hand, the advanced age of the patient, the two hernias, and already chronic catarrh of the bladder, caused him to fear the operation of lithotomy. Notwithstanding, he decided on performing this operation *above the pubis*.

The patient being placed and supported in the usual manner, an incision was made in the skin, the cellular substance and *linea alba*. M. Amussat punctured the bladder, from whence issued a quantity of purulent mucosity, and immediately introduced his finger into its cavity, where he felt an oval calculus, the size of a small egg, lodged in a sort of pouch (*cul-de-sac*) to the left of the bottom. After having extracted it, he begged some of the physicians present to examine the bladder for themselves. They recognised the pouch, of which we have just spoken, and felt their fingers grasped by the edges of the incision made through the anterior parietes of that organ. The canula was afterwards placed, and when the bladder had been cleansed by an injection through the canula, he united the wound by the first intention, above the instrument. The patient, who, during all the operation, complained but little of suffering, and incessantly joked with the assistant, was carried to bed, where he was kept in almost a sitting position.

At 2 o'clock, he had a slight febrile attack, which lasted but a short time. The urine, which escaped copiously by the canula, remained bloody all the day. He slept some hours during the night.

The next day, the urine resumed its natural color. The patient is tormented with colic, occasioned by *gas*, the expulsion of which was facilitated by the introduction of a gum elastic catheter into the anus.

The 9th, on removing the dressing, the wound was found to be cicatrized up to the canula.

The 10th, in withdrawing the canula, M. Amussat was obliged to use a little strength, so tightly was it embraced by the bladder. In the night, after the suppression of the canula, M. Buin experienced a strong inclination to make water by the urethra, but the urine continued to flow by the wound.

The 13th the patient began to take some simple soups, and left his bed. He continued to improve on the following days, and the cicatrization of the wound progressed.

The 18th, at 10 in the morning, (fourteen days after the operation,) the urine passed, for the first time, by the urethra, which occasioned a considerable degree of pain.

The 19th, and following days, there was but a small quantity of water discharged by the wound, which was entirely cicatrized by the 28th December, twenty-four days after the operation.

M. Buin began to walk out on the 22d day. He no longer experienced any pain in the bladder. The catarrh entirely disappeared. Sleep is natural, and the appetite good.

Note.—The operation abovementioned was performed under our eyes, and in the presence of upwards of twenty persons, among whom were Messrs. Magendie, Mareschal, Hatin, Dubrac, &c.

The results obtained here, as with other patients, prove, moreover, the great advantages obtained by the modifications introduced by this young practitioner in the operation of lithotomy above the pubis. With regard to this patient, whose case has been so fortunate and rapid, in spite of his advanced age, and the unfavorable circumstances in which he was found, M. Amussat, not having yet written on the subject, with the intention of being useful to those who might wish to perform the same operation, enters upon important details in the mode of treatment which he pursues after the operation, and on the care necessary to be taken with the patient, without again describing his method, which he had before submitted to the Academy. (See *Journal Analytique*, Janvier, 1828.)

Treatment.—The calculus being extracted, I introduce (he states) into the bladder, by the incision on the hypogastrium, the canula, which I make use of for carrying off the urine. To arrive there more surely, I slide down that instrument on the index finger of the left hand, which I had previously placed in the cavity of that organ, to serve me as a conductor. Without this precaution, one would be apt to carry the canula behind the posterior face of the bladder in the surrounding cellular substance; because that, after the extraction of the calculus, the urinary pouch flattens behind the pubis, and the opening which has there been made, closes up by the contraction of the muscular fibres, and would render it difficult to introduce the canula into that opening without a conductor. On the other hand, without this precaution, one might be led into error by the urine, which might escape through the canula, even when out of the urinary reservoir.

The canula, elastic like a bougie, resembles those made use of for injections into the vagina, eight or nine inches long for adults, and from five to six lines thick. It is bent in its long direction, and ought to be placed so that its concavity corresponds with the symphysis of the pubis. Its vesical extremity is furnished with a bulb, (*olive*,) on the sides of which there are two large openings. The other extremity is cut in the form of the mouth of the flute, half its thickness, and about two inches in its length, so as to form at this place a sort of gutter. At the part where this gutter begins, four threads are attached for the purpose of securing the instrument. The canula being introduced as above stated, it serves to cleanse the bladder, by means of an injection. We then proceed to the uniting, by the first intention, all the superior part of the wound.

Re-union.—For the purpose of obtaining the re-union in a more ready and easy manner, M. Amussat sponges carefully the edges of the wound, to remove the blood and water with which it has been bathed during the operation, then brings them in coaptation as exactly as possible with his fingers, whilst an assistant applies above the canula long adhesive straps, which extend from one side of the abdomen to the other. He establishes afterwards a point of compression on each side of the incision to approximate its edges, by means of small graduated compresses placed on each other over the adhesive straps. The whole is covered with a common compress, and kept in its place by a body bandage.

Manner of securing the Canula.—When the wound is united, it is very important to prevent the canula from vacillating in the interior angle of the wound where it is placed, otherwise in rub-

bing against the parietes of the bladder, it would create pain to the patient, and irritation of the part. For the purpose of avoiding these inconveniences, it is secured by means of the four waxed threads, with which it is furnished. Two of these threads are secured by the adhesive straps, made use of to unite the wound, and the two others, by the body bandage, by means of pins.

For the purpose of preventing the urine, which is continually discharging by the canula, from wetting the patient, after having covered the genital organs with a fine cloth, a small bag of oiled silk is placed under the instrument, to receive the urine; this also is attached to the body bandage.

The patient in bed.—The patient having been thus dressed, he is carried to bed, which ought to be so placed, that one can go around it. He ought to keep himself in nearly a sitting posture, the lower extremities extended horizontally. This position, according to M. Amussat, is preferable to any other, after the operation above the pubis. First, as the trunk is straight, the linea alba is stretched, and consequently the divided edges are approximated. Second, because the angle of the wound attached by the canula, is kept low, by which means the urine escapes more easily by the instrument, and cannot remain behind the pubis. To avoid the edema which takes place, (especially with old men,) in the scrotum, when we have left the testicles dependant, it is necessary to support them with a pledget of fine linen placed under them. The pelvis of the patient is afterwards covered with a cradle, which supports the bed clothes, and prevents their pressure on the canula. Every half hour it will be necessary to empty the bag, which receives the urine, and even oftener if thought necessary.

We must not be too eager to bleed. When the patient is an old man, we must not, says M. Amussat, be too eager to combat by either general, or local bleedings, the febrile symptoms, which may supervene after the operation, even although the patient be plethoric. In fact it has occurred, that a bleeding performed on an individual advanced in age, has caused such a prostration, that with difficulty he was again raised, whilst (absolute diet,) diluting drinks, are almost always sufficient to dispel these symptoms. Moreover, M. Amussat assures us, that he has never seen peritonitis resulting from his operation, attack any of the patients on whom he has operated.

In cases, where, some hours after the operation, *blood* should flow through the canula or *around it*, we must be cautious not to withdraw it, through fear of hamorrhage; this accident, in fact, is little to be dreaded in the high operation.

He ought then to be satisfied by making an injection in the

bladder through the canula, when the discharge of blood would be speedily arrested. If the canula is plugged up by blood or mucosites, we must clear it by means of an injection, or by a feather introduced into its cavity.

Cathartics.—It often happens, that old men who have been operated on, complain of colic more or less violent; this is occasioned by flatulence, which M. Amussat recommends us to get rid of, by the introduction of a gum elastic catheter into the anus. Far from regarding constipation as injurious, with those operated on above the pævis; on the contrary, he deems it a fortunate occurrence, one which conduces to the union. In fact, if the patient feels a continual desire to go to the *night stand*, he would be under the necessity of getting up; of changing position, and making efforts to relieve himself, and thus disarranging the dressing. Moreover, when the state of constipation exists, M. Amussat is very cautious about removing it, whether by the use of purgatives, or even by gentle laxatives; especially when the wound is not perfectly cicatrized. He has remarked, that the employment of these means, has often been followed by an obstinate diarrhoea, which weakens the patients, and is very difficult to arrest.

Removal of the Canula.—On the 7th day, in the case of adults, and on the 4th or 5th day with children, M. Amussat removes the canula, and does not substitute a smaller, as was his former practice, that having appeared to him as useless. At that period, the wound is cicatrized by the first intention in all the superior parts, and the fistulous opening, which is established around the canula, between the bladder and the abdominal parietes, is sufficiently consolidated to prevent any fear of the extravasation of urine.

When the canula has been withdrawn, we must keep the patient (as long as possible) seated in an easy chair; the vertical position of the trunk facilitates the discharge of the urine; and the approximation of the edges of the sinus, left by the canula. After the withdrawal of this instrument, M. Amussat does not endeavor to hasten the discharge by the urethra, by means of elastic catheters. He thinks the application of these instruments as useless after the high operation, as every thing tends to prove, that they cannot prevent the urine from flowing by the hypogastric wound, until it be completely cicatrized. He is led to believe, that the pressure of this instrument keeps up the hypogastric fistula, by the irritation which it causes in the bladder.

Hygienic Treatment.—M. Amussat thinks, that we cannot pay too much attention in observing the rules of hygiene after all

capital operations, but particularly after that of lithotomy. It is to this precaution, that he attributes in a great measure the success he has obtained.

The chamber in which the patient is placed, ought to be large, and an even temperature always preserved. We must carefully avoid subjecting our patient to cold. He ought to wear, even in bed, a flannel jacket, and the lower extremities ought to be covered also, with pieces of flannel. It is necessary, frequently to squeeze out the sponges placed in the bag of oiled silk, for fear the urine, wetting the thighs and scrotum, should cause a chill. In order to avoid the unpleasant smell of this liquid, we ought frequently to change the silk bag, and the sponge it contains.

A tisan of hartshorn, taraxicum and flax seed, is the only drink prescribed during the first days; notwithstanding, if the operation has not been followed by any serious inflammatory symptoms, abstemious diet too long continued, would be prejudicial. On the 6th or 7th day, M. Amussat begins to give his patients some food of easy digestion, such as soup, or farinacea, &c.; he afterwards makes his food more nutritive and abundant, in proportion as they convalesce, which usually is perfected by the 20th or 30th day. The wound resulting from the operation, is then marked by two cicatrices; the superior obtained by the first intention is linear, whilst the other, which is inferior, obtained by the second intention, in the part formerly occupied by the canula, is oval, and soon forms a small projecting point.

After having thus described his mode of treatment, and the necessary attentions to be paid to the patient after the operation, M. Amussat makes a recapitulation of the different high operations performed according to his method.

The patients operated on, are twelve in number, among whom are found three children, one aged two years, another aged four years, and the third aged twelve years; one adult, and eight old men, from sixty to seventy-seven years. Of these twelve patients, *one* only died in consequence of the operation; and it would be unjust, M. A. observes, to attribute his death to the operation employed, since whatever means had been resorted to, it is probable that the result would have been the same. It was the old general, of seventy-two years, with whom the operation was tedious, and extremely painful. The bladder, much diseased, contained a voluminous and friable stone, in a manner encrusted by fungosities, which arose from the internal surface of the bladder. It was broken into several fragments, in endeavoring to sever it, which rendered the extraction thereof more

tedious and painful. Death took place on the 4th day. The canula could not be kept in the bladder more than 24 hours, in consequence of the intractability of the patient. Post mortem examination was not made. M. Amussat thinks, that no conscientious surgeon would attribute to the operation, the death of the two other old men, who sank a very long time after. The first, aged seventy-six, did not die until sixty-two days after the operation, in consequence of a malignant intermitting fever. The wound had healed, and the urine passed by the natural passage. The second, aged seventy-one years, who died at the hospital Saint Louis, forty days after the operation. The autopsy did not discover any serious affection of the bladder, as some had asserted; whilst there existed in other organs diseases quite sufficient to explain the cause of death, such as, tubercles in the brain, ulcerations and worms in the stomach and alimentary canal.

After these results, M. Amussat concludes by saying, I think that the method I make use of, ought to require the attention of practitioners; and, if we consider the age of my patients, I fearlessly assert, that there is no method of operating which offers more chances of success; since, out of twelve patients, there was in reality but *one* who died in consequence of the operation; besides, he was in so unfavorable a condition, that any other method would not have succeeded better. He adds, that he regrets not having more facts to present to the Academy; but he believes, that he renders a service to science, in conscientiously exposing the results of his practice.

Thus, gentlemen, I have endeavored to give, if not an elegant, I hope a tolerably correct translation, of the method pursued by M. Amussat in the operation above the pubis. And as I had two opportunities of witnessing the high operation, performed at Paris, by the celebrated Civiale, it may not be irrelevant to point out the difference in the operation, as performed by the latter.

In the first place, after injecting water into the bladder, he (Civiale) introduces a long silver catheter, in which is concealed a sharp pointed stilet, (*sonde à dard*.) This is intrusted to an assistant. The opening is then made through the hypogastrium, in the same manner as that pursued by Amussat. He next separates the sides of the incision, so as to see the bladder. The assistant then pushes the catheter against the internal coat of that organ, opposite the incision in the hypogastrium. The stilet is then made to pierce the bladder from within outwards and upwards. This serves as a guide for the introduction of the bistoury, to enlarge the opening. A bent, flat hook is then

introduced to suspend the bladder until the stone be extracted, and the bladder washed out. The abdominal wound is then covered with lint and gentle compresses. No attempt is made to unite the wound by the first intention; as soon as the patient is placed in bed, (the silver catheter having been previously withdrawn,) a gum elastic catheter, of about three feet in length, is placed in the urethra, where it is suffered to remain until the wound be cicatrized. When we compare these operations, that of Amussat appears to me the preferable: first,—because it is extremely difficult, if not impossible, to make the puncture with the stilet in the catheter close to the symphysis, so as at all times to avoid the reflection of the peritoneum, an accident which has occurred in the practice of others, less expert than Civiale. This permits the extravasation of urine into the abdominal cavity, the fatal consequence of which may be easily conjectured. Second,—the catheter left in the urethra must pass at least two inches into the cavity of the bladder; consequently, it never can be completely emptied of its contents; add to this, the irritation produced by a foreign substance remaining for so long a time in the urinary canal.

ART. VII.—*Report on Diseases, for the months of July, August, September, October, November, and December, 1830. By J. S. BOWRON, M. D., Chairman of the "Committee on Diseases" of the Medical Society of the City and County of New-York. (Read before the Society, April 10th.)*

SINCE the time of the appointment of the committee, the city has been unusually healthy. There has been no prevailing epidemic of much consequence; and those diseases which are of common occurrence, have not exhibited any striking peculiarities. There has, perhaps, been a greater prevalence of eruptive complaints than usual. Small pox, measles, and scarlet fever, diseases which are found to exist, in greater or less degree, at all times in this city, have been extensively prevalent. A great variety of anomalous eruptive complaints have also been observed. It is a remarkable coincidence, and recorded by every writer on these diseases, that whenever small pox has prevailed to a considerable extent, these nameless and endless

varieties of cutaneous affections have likewise existed. From the uniformity with which this has been observed, it would seem, that notwithstanding the variolous complaint is usually communicated by contagion, yet there are other circumstances necessary, to make it prevail epidemically. What those circumstances are, it may, perhaps, be difficult to determine with much accuracy. Medical philosophers have uniformly attributed them to what they have been pleased to denominate by the vague term, "epidemic influence." We have always considered this concise and incomprehensible name for an unknown cause, to be entirely synonymous with a thousand other expressions, which the ingenuity of medical writers have contrived, to help them over difficulties that they could not understand. Without attempting to offer any explanation at this time ourselves, we will barely remark, that in all probability, it will be found, upon subsequent inquiry, to originate from physical changes, and alterations of matter on the earth, effected by planetary influences.

As we have nothing new to offer relative to the treatment of these complaints, we shall take leave of this part of our subject, by adverting to the great and criminal neglect of early vaccination. Notwithstanding the weight of testimony in support of the efficacy of vaccination, which has been accumulating for half a century; notwithstanding the importance of the subject has been enforced by all the learning and eloquence of the wisest and the best of men, yet a large portion of our fellow citizens still continue recreant to a solemn and parental duty, and neglect to throw a shield of protection over their exposed offspring. If our legislative councils have the power to enact laws to regulate quarantines, and all the consequent restrictions on commerce, to prevent the introduction of contagious diseases into our cities,—thereby affecting, to a greater or less extent, the pecuniary affairs of every individual in our country,—have they not that infinitely lesser power, to make it obligatory upon all parents and guardians, to have all children under their care vaccinated, before they arrive to a certain age? There can be no doubt that they have. How much more, then, would it redound to the honor and reputation of our country, if our legislatures, instead of passing laws legalizing a species of murder, by turning loose upon an unsuspecting community a horde of Goths, under the specious title of "steam doctors," and "botanic physicians,"—should enact some laws to prevent the prevalence of that most fatal disease, small-pox. There seems to be only one thing to prevent their doing so, and that is, the plain, obvious, and certain preventive powers of vaccination.

Such is the obliquity of the human mind, that many things are rejected from their simplicity, and other things of doubtful utility are prosecuted with the most untiring zeal and ardent enthusiasm, and at the expense of immense treasures and blood.

The committee being deeply impressed with the importance of this subject, would respectfully suggest to the Medical Society the propriety of petitioning the legislature upon this momentous subject. We feel the more confidence in making this suggestion, from observing that that profound and accomplished scholar, T. Romeyn Beck, late president of the State Medical Society, in his annual address,* has given the weight of his authority in favor of legislative interference. What regulations should be adopted for the accomplishment of this desirable object, does not, of course, fall within our province to determine.

Intermitting and mild remitting fevers have been the only form of febrile complaints that have fallen under our notice. Only two cases of yellow fever have been observed during the past season. Typhus fever has occasionally been seen; but as this form of fever is only a modification of other febrile diseases, produced by accidental circumstances, not necessarily connected with their production, it should, perhaps, be less noticed as a distinct disease.

We have observed the increased prevalence of intermitting fevers in the suburbs of the city, within the last few years. A diversity of opinions has prevailed among medical men relative to the cause of their greater frequency than formerly. The most rational conclusion appears to be, that in consequence of the great improvements authorized by the municipal authorities, such as draining and filling up of marshes, there has been produced a state of things favorable to the production of malarious exhalations, by most physicians considered necessary, in all cases, for the appearance of intermitting fever. That intermittents are *generally* produced by some peculiar exhalations from the earth, which, in the present state of knowledge, it is, perhaps, pardonable to call malaria, (for we do not know certainly what it is,) there can be no doubt. We are, however, far from believing this to be universally the case. Most undoubtedly regular intermittents are occasionally produced by any and all of those causes which are productive of other febrile complaints. In order that we may not be misunderstood, we should, perhaps, mention in this place, that we consider all fevers of every kind in their phenomena only modifications, more or less complicated, of intermitting fever. We consider this form of disease a

* See No. I. of this Journal, page 17.

beautiful and simple exhibition of the phenomena of fever. All other febrile complaints are more complicated, in consequence of the primary affections being more intense, and concentrated upon different organs of the body. From neglecting, or an unacquaintance with, this important truth, how often have we seen the most absurd and ridiculous speculations palmed upon the public as true philosophy. We wish to speak with due respect of all medical men; and we are not insensible of the talents and profound learning of Dr. Macculloch. We cannot, however, but be surprised, and at the same time, amused, with the fanciful speculations of this gentlemen. He was led to believe that all intermittents were produced by malaria; and he was so far consistent with his doctrines, as to believe most devoutly that all other complaints that manifested an intermitting form, must consequently originate from the same cause. Hence he found it necessary, in conformity with his views, to place nearly the whole catalogue of human maladies in his class of malarious diseases. It is true, he did not find malaria in every place where he discovered an intermitting neuralgic affection; yet with a fecundity of invention, characteristic of many of the members of the medical profession, he very readily accounted for this difficulty, by supposing that malaria could be wafted upon the wind two or three thousand miles; and this too, in many cases, where the wind blew directly in an opposite direction. It would be useless to argue against a man of such boundless invention, more particularly so, as with such men facts are nothing, and speculation every thing.

Whilst upon the subject of fevers, it may, perhaps, be proper to make some inquiry into the nature and phenomena of febrile complaints in general. An investigation of this kind will very properly precede the few concise remarks we shall have to make relative to the treatment of those cases of fever that have fallen under our notice within the last few months. We are aware of the common observation, that facts are of more consequence than theory. At the same time that we admit the truth of this opinion, we must aver, that the most important facts for a physician to know, are those which have reference to the nature of disease. If some are disposed to call such facts theories, we cannot, of course, object to their doing so. He, however, who attempts to cure any complaint without a knowledge of its real nature, is so far an empiric, and is censurable for his conduct, although he may chance to do right, for there is at least a considerable chance of his doing wrong.

When we take into consideration the fact, that hardly any disease, of whatsoever name or kind, ever terminates fatally

without first inducing febrile disturbance, the importance of an inquiry into its nature is obvious, and admitted by all. Hence we find that the greatest abilities and talents in every age have been actively engaged upon the subject. Yet, notwithstanding all that has been done, and all that has been written, there is, perhaps, at this time as great a contrariety of opinion and doctrines, as there ever has been in any age of the world. To what are we to attribute this great diversity of opinion? Is it owing to the inscrutable nature of the complaint? or to that disposition, so natural to the mind of man, to form opinions and doctrines, without an extensive survey and careful investigation of facts? In our opinion, the latter is the principal cause.

Without taking any extensive view of the nature of fevers, at different times and places, and in all their different grades and varieties, medical theorists have been content, from isolated facts and localities, to draw inferences, and form theories, which when applied to all the diversified forms of fever, will be found at variance with truth and sound philosophy. Yet, if those same theories are considered with reference to particular varieties only, we shall find nearly all of them correct. For that fever is produced in the manner asserted by Cullen, Brown, Darwin, Rush, Armstrong, Wilson Philip, Broussais, and others, is, we think, sufficiently proven by the experience of many of the most eminent physicians of the present day. The grand error into which they have all fallen, is the opinion, that the proximate cause is in all fevers the same, and always seated on some particular organ, or parts of the system. From observations that we have made, we consider the fact well established, that fevers are produced by a great variety of causes, differing in kind, and also differing in their operation upon the animal machine; and that different organs and parts, are occasionally primarily affected. Climate, change of atmosphere, different constitutions of individuals, and a variety of other causes, will at particular times and seasons, and under different circumstances of locality, produce a radical difference in the nature and character of febrile diseases.

In order to illustrate our views relative to the operation of deleterious agents, in the production of fever, we beg leave to refer to some physiological principles.

The animal machine is composed of a great variety of organs, all of which have peculiar functions to perform; and at the same time, all harmonize in supporting the whole system and animal life. When all the functions are regularly performed, we have an exhibition of perfect health. If, however, any important organ becomes diseased, and its natural functions are entirely suspend-

ed, the whole system will soon be affected; and generally in proportion to the importance of the organ primarily diseased, and the nature and kind of the morbid impression. It is this universal commotion or disturbance of *all* the functions, which constitutes fever. The definition of fever by Dr. Hosack, is, therefore, strictly correct. It is emphatically a disease of the whole system. This universal disease, however, unquestionably originates, in *all* cases, from a local cause. Although we contend that fevers always have a local origin, yet we do not, on that account, "narrow an important subject, which disdains such petty limits," as has been asserted by a talented writer of a late prize essay,* but, on the contrary, insist as fully upon its universal effect on all the functions of the body, as those medical gentlemen do, who believe in a *febrile* ubiquity, and maintain that fever exists *every where* in the system, but has its seat *no where*.

When we speak of the local origin of fever, we wish it particularly understood, that we do not believe, that local inflammation is in all cases necessary for its production. Although it generally exists in the last stages, and frequently in the first, yet fever does not *necessarily* require inflammation to produce it. Irritation, however, must in *all* cases exist; for without irritation, fever cannot be produced. This irritation may be produced in a great variety of ways; it may originate from mental disturbance, morbid poisons, local injuries, over excitement, or mere debility. We are aware, that autopsic observations have established the fact, that, in the great majority of those who die from febrile affections, evident signs of previous inflammation are very manifest. But let the sagacious pathologists remember, that inflammation of particular organs and tissues, is frequently a consequence of the excessive febrile action, propelling an unnatural current of blood upon parts, already weakened by other causes, and, therefore unable to act with sufficient energy, they become congested, and ultimately inflammation takes place. Undoubtedly, in many cases, the local inflammations and congestions in typhus fever, are consecutive affections, induced by the causes above mentioned. Does not the experience of every physician justify this opinion? Do not the weakest organs almost invariably first manifest the existence of inflammation in fevers? And yet, notwithstanding these facts, there are self-appointed dictators in medicine, who will pour out their denunciations against all those practitioners, who, because inflammation *may* exist in some form or other, and in some stage of fever, do not on that account think it always necessary in every case, for its production.

* Dr. Magill.

If the view we have taken of the nature of fever be correct, it will be apparent, that the primary local affections which produce it, may be entirely different in different cases, and may perhaps manifest a specific kind of action in the system, peculiar to the existing cause of each primary local disease. We are inclined to believe, that all morbid poisons, or epidemic influences, have each a greater disposition, if we may be allowed the expression, to affect particular organs, in preference to others. In confirmation of this opinion, we have the authority of professor Joseph M. Smith. In his learned and able work on epidemics, he observes, "As a general truth, therefore, it may be said, that different poisons produce different disorders, each of which has different grades, that collectively form an unit." All the different epidemics, that have fallen within our observation, have shown a great tendency to affect some particular part of the system. The pneumonia typhodes, which prevailed a few years ago, with such desolating fury, in many of the northern states, seemed primarily to affect the lungs; although in many cases the brain and other organs, appeared to bear the principal force of the disease; yet it is presumed, that in these cases the morbid congestion and inflammation of these parts, were merely consecutive, induced by some peculiar weakness, or disposition to disease in those organs. It is probable, that in all other epidemics, the same disposition to affect particular parts of the system, prevails; and where we find apparent exceptions to this rule, they may be considered accidental. We are, no doubt, sometimes deceived by these anomalous cases, as to the part first affected. The primary diseased organ may not manifest much disease, and yet be the cause of the more violent disease of some other part.

Circumstances of locality, independent of epidemic influences, have also a remarkable effect in modifying the character of fevers. The hardy inhabitants of Russia, when laboring under febrile affections, manifest a very different grade of disease from what is observed in the fevers of Batavia. Fevers in the West India islands exhibit a concurrence of symptoms, very different from those of northern latitudes. Even in the same districts of country, local causes will materially modify the character of febrile complaints. How preposterous it is, then, for a Cullen, a Brown, a Rush, or a Broussais, to seat themselves in their professorial chairs, and confine their observations and inquiries to the narrow limits of their own neighborhoods, with surpassing gravity, and authoritative dictation, inform the rest of the world, that all fevers, of whatsoever country or kind, have the same unvarying proximate cause:

A physician, in his investigation of febrile affections, should be unshackled by any particular theory. We would then occasionally find Rush to be correct, in asserting that an affection of the blood-vessels is the primary cause of fever; that Cullen's theory of the affection of the nervous system; Brown's *sthenea* and *asthenea*; Clutterbuck's inflammation of the brain; Armstrong's local congestions and inflammations; Wilson Philip's capillary debility; Broussais's phlogosis of the mucous membrane of the intestines; and Reid's inflammation of the medulla spinalis,—are all *occasionally* the proximate or primary causes of febrile complaints. Frequently after fever has continued some time, other organs, in addition to those primarily diseased, will become secondarily affected; and will produce that combination of operative causes which frequently renders the appearance of fever so irregular, and also very difficult to treat.

The almost exploded doctrine of idiopathic fever has recently been ably supported by the editor of the New-York edition of Gregory's Practice. All that sagacious reasoning and able illustration of premises could avail in supporting a baseless fabric, has been done by the editor. But, unfortunately for the doctrine he has so zealously defended, the light of truth, poured upon the subject by pathological investigations, has so completely uprooted and overturned the foundation of this ancient doctrine, that he will, perhaps, be found almost the last, but not least, of the able defenders of an opinion almost sacred from its antiquity, and the high and respectable character of its supporters. The noble sentiment and ardent enthusiasm, however, which inspires the learned editor with veneration for ancient doctrines, and impels him to bear off triumphantly and unharmed the fathers of medicine, cannot fail to meet with a corresponding feeling in the breast of every lover of ancient learning. At the same time, truth is irresistible, and must prevail.

The writer we have alluded to remarks: "Can scepticism reach so far as to impugn the records of centuries, faithfully transcribed from the pages of nature, by Hippocrates, by Sydenham, and by Boërhaave? Even so!" Now we would answer in the negative. So far are the opponents of the doctrine of idiopathic fever from undervaluing the records of antiquity, that they can appeal to them for facts that will triumphantly overthrow many of the opinions advanced by these ancient writers. And in addition to these facts, so abundantly recorded by Hippocrates, by Sydenham, by Boërhaave, and others, we can, in modern times, boast of the discoveries of Harvey, Hun-

ter, Cullen, Baily, Bichat, Rush, Broussais, "and a host of others." All the accumulated facts of ancient and modern times have unquestionably enabled physicians to make some advances in pathological inquiries, and consequently qualified them to form more correct views of the nature of disease. If such has not been the case, we may justly deplore the waste of time and industry, uselessly lavished in unavailing investigations.

The assertion of the celebrated Dr. Good, so often quoted, that "a single example of fever terminating fatally, without a trace of inflammation in any organ whatever, and such examples are perpetually occurring, is sufficient to establish the existence of fever as an idiopathic malady," is, perhaps, the most untenable assertion he ever made. Because, forsooth, we are in some cases unable to show some local inflammation after death, that therefore fever can and does exist as an idiopathic disease. Now this authoritative declaration of this celebrated writer, proves incontestably that he had forgotten, or that he never knew the fact, that fever is often produced by an *irritation*, as well as by actual inflammation. Consequently, post mortem examination could never discover, from the condition of parts, whether there had been local disease or not. The morbid irritability of some constitutions is so great, that a simple irritation, which upon a different constitution would hardly produce any disturbance, will excite the most violent febrile commotion and death. And if it be true, as is asserted by the learned supporter of idiopathic fever, whom we have before alluded to, that "the most corrosive poisons, as arsenic, corrosive sublimate, &c., frequently destroy life, without leaving any impressions of inflammation, or even fluxion, on the stomach;"* is it difficult to conceive, how some local irritation may produce febrile action, without leaving any perceptible marks of the primary irritation? Surely not. Then how absurd is the conclusion, that in those cases where local disorganization cannot be shown after death, that consequently that ignis fatuus, called idiopathic fever, must have done the mischief. In our opinion, the notion of idiopathic fever, existing as an independent disease, is altogether unsupported by facts, and correct reasoning.

We are disposed to believe, that many of the erroneous views upon the subject of fever have originated from the fact, that phy-

* Dr. Peixotto.

sicians have mistaken the *effect* for the *cause*. Fever, properly so called, is the *result* of universal functional derangement. We therefore use the term fever, to express the aggregate of those phenomena, which collectively constitute the disease.

It has been justly remarked by an able writer, that it is an established rule in philosophizing, to admit of no more "causes than are sufficient to explain the phenomena."* If, then, in investigating the subject of fever, we can prove unequivocally that certain local causes can produce *all* the phenomena of fever, then we have a right to conclude, that fever does *not* exist as an idiopathic affection.

It is admitted by every physician, that an inflammation of the brain, lungs, stomach, liver, and other important viscera, will produce all the phenomena of fever; and that, in order to remove the febrile disturbance, we have only to remove the local inflammation. External injuries from wounds, fractures, and contusions, will often excite the most violent fevers, that will frequently assume all the grades from ordinary inflammatory fever to the most malignant typhus, according as surrounding circumstances, and constitutional peculiarities may determine. In the great majority of cases of continued fevers, as they are called, we have the most unequivocal evidence, that local irritation is the exciting cause. Post mortem examinations, also, have almost invariably discovered lesions of important organs and tissues, upon which, no doubt, in many cases, the febrile symptoms have depended.

If, then, these facts are admitted, would it not be more philosophical to infer, that in the *few* cases in which we are unable to discover a local disease, that our inability to do so originates from our ignorance of facts, and not because a local affection does not exist. We contend, that the true principles of inductive philosophy require, that we should reason from those things we do know, rather than have recourse to chimeras and conjectures, to assume the existence of things not cognizable to any of the senses. Taking analogy for our guide, in all cases not susceptible of absolute proof, and we have a right to infer, that as like causes will produce like effects, therefore, as we do know, that in nineteen cases out of twenty, local disease is the cause of fever, consequently, the twentieth also originates from a similar cause?

When symptomatology comes to be studied with particular

* Dr. J. M. Smith.

reference to pathological facts, and we become better acquainted with the signs of disease, may we not rationally hope to be able in *all* cases to discover the local and primary cause of fever? Here we may, perhaps, be permitted to express our astonishment in hearing the most eminent pathologists of the present day condemn, with such unhallowed zeal, that most useful of all studies to the physician,—we mean symptomatology. We would ask those exclusive pathologists, how we are to discover the existence of a local affection, except by the symptoms? It would almost seem, from their writings, that in order to find the seat of a complaint, the physician must, in all cases, carry with him his scalpel, and forthwith commence dissection, and delve among the viscera, in search of the disease, before he may have the boldness to prescribe. Shall such exclusive doctrines forever be the bane of the science of medicine? We hope not. Earnestly do we unite in the following sentiments of a learned and able writer.—“All that we demand, is, that the lights of ancient symptomatology and modern pathology be blended; their united lustre will pour the beams of noonday upon the hitherto darksome paths of medicine, which must ever remain imperfectly illumined, if deprived of either source of light.”* Such, however, is the natural perverseness of the human mind, and so very prone are medical men to get in the pursuit of a favorite subject, and then forget every thing else, that we fear pathological anatomy, instead of improving our knowledge of symptomatology, will, for many years to come, retard an advancement in this most useful study. The pathologist may examine, with the most critical exactness, all the morbid appearances to be found in dissection, yet if we are unacquainted with the symptoms originating from these local affections, all our acquaintance with morbid anatomy will be useless in practice. To illustrate more particularly the importance of symptomatology, as connected with pathological anatomy, would be inconsistent with the object and brevity of this paper.

Before leaving the consideration of the pathology of fever, we think proper to notice the manner in which the most celebrated physician of the present age, M. Broussais, has been criticised by the modern champions of idiopathic fever. The splendid talents of the Parisian professor, and the able and incontrovertible arguments with which he has exposed the absurdity of the doctrine of idiopathic fever, has marked him out

* Dr. Peixotto.

as a proper victim to be offered up at the altar of ancient superstition. Hence from every quarter, the missiles of a relentless opposition are hurled against his doctrines. It is with regret that we heard on a recent occasion the able professor* of *Materia Medica* and *Medical Jurisprudence*, in the Medical College of this city,—a gentleman of brilliant talents and extensive learning,—speak with the utmost contempt and most bitter sarcasm of the doctrines of Broussais. Although this gentleman, for whom we have the most profound respect, has a right to his own opinions, yet we do contend, that the interests of medical science require, that when the opinions of eminent physicians are criticised, their doctrines at least should be fairly quoted. It is certainly unfair for these valorous writers to conjure up phantoms that never existed, in order to show how easily they could be vanquished. Without intending to include this gentleman in our censure, we may be permitted to remark, that nine out of ten of those who condemn Broussais, are entirely unacquainted with his doctrines. It may, therefore, be a question, how far the opinion of men must be regarded, “who, having too much pride to study, and too much wit to think, undervalue what they do not understand, and condemn what they cannot comprehend.”

The celebrated Cullen, a firm believer in idiopathic fever, whose towering genius and powerful mind shrunk not from the investigation of any subject connected with the science of medicine, in order to explain how the phenomena of fever was produced, was compelled to have recourse to the doctrines of Stahl. He supposed there was an archæus, or independent existence, which presided over the system, to preserve it from harm. It was this principle, in the opinion of Cullen, which produced the spasm upon the extreme parts; upon which he thought all the subsequent phenomena depended. Without any derogation from the character of Cullen, this opinion of his may be pronounced crude and unphilosophical. That there is a power in the system, calculated to expel noxious and deleterious agents, is undoubtedly true. But, it is nothing more than the *vis insita*, the vitality, or excitability which is inseparably connected with animal organization. It is owing to this principle, that there will be a fluxion, or determination to an irritated part. Hence, when any important organ has its function suspended by some powerful irritation, it will become a centre of

* Dr. John B. Beck.

fluxion, the blood will be accumulated upon the internal organs and larger vessels, and the surface will, consequently, be shrunk and cold, exhibiting the phenomena of the cold stage of fever. The subsequent appearances follow as a consequence of this. It is impossible, but that this accumulation of the circulating fluids upon the heart and larger arteries, will excite a re-action as it has been called, and the blood will be propelled to the extreme parts of the system, where excitability has accumulated, in consequence of the previous subtraction of the ordinary stimulus of those parts. This will produce the hot stage of fever. After a longer or shorter period, the hurried tumult of the circulation will subside, a relaxation will follow, and the sweating stage will take place. In this concise statement of the phenomena of an intermitting fever, we have endeavored to avoid theoretical speculations, and have only mentioned facts, that are obvious to every one. We care not how these things may be explained, by different physiologists. We only insist upon the all important fact, that some local irritation is the primary cause upon which all the subsequent phenomena depend.

It is not pretended, that in all fevers these phenomena are fully and regularly manifested; for, as we have before mentioned, in continued fevers, there is often such a combination of irritated and diseased organs, that a harmonious and simultaneous action, such as we see in intermittents, is impossible. But, so far as the different stages are manifested, we presume they are produced and governed by those laws of the animal machine that we have alluded to.

We will venture to express the opinion, that the only difference in the manifestation of the febrile phenomena, between intermitting and continued fevers, originates in consequence of there being in continued fevers, one or more organs *constantly* under the influence of irritation, and functional derangement. In intermittents, the irritation is not sufficient to produce a *constant* derangement of function. On the contrary, the primary diseased organ will, in the intervals of the paroxysms, wholly or partially resume its healthy functions, and consequently will not disturb the operation and healthy action of other parts. If, however, in the progress of the complaint, the primary irritated organ, or some other parts, that may have become consecutively affected, should have their natural functions *constantly* deranged, by an increase, or long continuance of the irritation, then, consequently, the fever will assume the continued type.

In many cases of continued fever, particularly after the fever has continued some length of time, we see several exacerbations and remissions in twenty-four hours. These are produced in

consequence of there being a *number* of organs under the influence of permanent irritation. Hence after one irritated and diseased organ shall have produced an afflux to the irritated parts, there will consequently be a reflux of the circulating fluids, to the surface and other parts. Then again some other organ will, in its turn, produce in a greater or less degree, the same succession of symptoms. It is also possible, that in some cases, where there is only one organ permanently irritated, in consequence of some constitutional peculiarity, there will be two paroxysms in twenty-four hours, originating from the same irritation.

How it happens that the paroxysms of fever, should have regular periods for their manifestation, we are at present unable to explain. We are inclined however, to believe, that it is principally owing to the circumstance of the primary irritations remaining nearly the same through repeated paroxysms, and consequently requiring about the same time to produce the same effects.

If the foregoing observations upon the nature and phenomena of fever be correct, then the conclusion is irresistible, that there can be no fixed and determinate plan of treatment adopted; but, on the contrary, the treatment must be modified, in order to meet the ever changing forms which fevers assume. As well might the mariner take for his guide the prosperous voyage of some preceding navigator, with the intention of following the same track, spreading the same canvass, and steering at all times in the same direction of the compass, without any regard to the vicissitude of weather, adverse winds, and tempests of the ocean, as for a practitioner to attempt to treat all the variety of febrile diseases, after the manner proposed by any of the celebrated writers we have mentioned. The practical inculcations of Cullen, Brown, Armstrong, Rush, Broussais and others, are in many respects highly valuable, and should be familiar to every practitioner. But to expect that a uniform adoption of their practice, to the extent and uniformity which their writings evidently and positively inculcate, would be right and proper, is in conflict with every day's experience, and the observation of every practitioner, who has taken the trouble to think for himself.

The observations we shall have to make, relative to the treatment of the febrile complaints of New-York, will, of course, be of a general nature, without entering into minute and systematic detail.

As we have already remarked, the character of a disease is very much modified by the locality in which it may appear; hence it is, perhaps, the first and most important inquiry that

a practitioner can make, to endeavor to ascertain the general character which diseases are disposed to assume in any particular place. Without this knowledge, we shall often fail to afford that relief, which a more intimate acquaintance with these peculiarities would enable us to render our patients.

After a careful attention to the prevailing complaints in this city, for the last few years, together with an attentive perusal of most of the essays upon the different diseases that have appeared within the last half century, we think we are warranted in asserting, that nearly all our complaints are of the inflammatory type. Although inflammatory affections may not exist at the commencement, yet sooner or later, they almost invariably appear, and require the principal attention of the physician. It may, therefore, be laid down as a general rule, that in all cases of fever, which are not regularly intermitting, venesection is proper and necessary. The quantity of blood to be abstracted, must, of course, be proportioned to the extent and violence of the inflammatory symptoms, which vary in almost every case; consequently, it requires close attention and careful discrimination, to discover the extent to which blood-letting may be carried. So far as our observation has enabled us to form an opinion upon the subject, we are decidedly convinced, that in the majority of cases, venesection is not sufficiently attended to. If it was oftener resorted to, to prevent the super-vention of inflammatory symptoms, which, in ninety-nine cases out of a hundred, will certainly appear in the progress of the disease, we are satisfied much advantage would result from the practice. That from some cause or other there has been, for many years past, an undue apprehension of injurious consequences from bleeding, is very apparent. From what this apprehension has arisen, it may be difficult to determine; for that it has not come from any knowledge of its pernicious effects, we can appeal with confidence to the united experience of the whole profession. Every candid physician will frankly confess, that he seldom ever found bleeding injurious; but, on the contrary, will express his painful regret, that in very many instances, he neglected to carry venesection to a sufficient extent.

The great importance of having the bowels freely operated upon by cathartics, is, we believe, pretty generally admitted. We are, however, satisfied that cathartic medicines are not administered with sufficient freedom: given early in the commencement of fevers, they have the happiest effect in mitigating the disease. Calomel given in doses of fifteen grains every four hours to an adult, until it procures copious evacuations,

followed up with an infusion of senna and sulphate of magnesia, affords infinitely the best cathartic medicine of the whole *materia medica*. To enumerate the different ways in which calomel operates advantageously in the removal of febrile complaints, would be incompatible with the nature of this paper. We may mention, however, its peculiar specific operation upon the liver, as among the most important of its effects. By unloading the hepatic organs, which are almost invariably congested in fevers, it removes a principal source of the irritation which constitutes the disease. We would, therefore, earnestly recommend a more liberal use of this cathartic in preference to all others, but not to their exclusion.

When local inflammation exists in any part, there is nothing that will so powerfully contribute to its removal as blistering immediately over the local affection. A free discharge, kept up from the blistered surface for a few days, will generally remove the local inflammation more certainly and speedily than any other remedy. Where the evidence of local disease is not very manifest, blisters seldom do much good; used as they frequently are, in the last stages of typhus fever, to excite the system, or for some other less obvious intention, they invariably do harm, and only contribute to hasten the destruction of the little remaining vital powers, which it should be the object of the physician to cherish, not destroy.

Bleeding, the use of cathartics, and blisters, constitute the principal remedies upon which we can rely in the treatment of fevers. Although these things are simple in themselves, yet to use them with judgment and discretion, requires the exercise of the best faculties of the human mind. To determine the time, the extent, and proper way to administer them, would call into action all the powers of the strongest intellect. Let no one suppose, therefore, from the simplicity of the agents, that any thing less than an exercise of all the energies of the mind, is necessary for their judicious application. We would not wish to be understood as undervaluing other remedial agents, which are always more or less necessary in every case. For, although inferior in point of utility, as most other things unquestionably are, yet upon a proper attention to simple remedies, in conjunction with more powerful means, the life of the patient will often depend.

Intermittents are less frequently combined with inflammatory affections, than any other form of fever. After the disease has continued a considerable time, however, it is not uncommon to find congestion and inflammation in different parts,

more particularly about the liver. So that in every case it is advisable to commence the treatment with active cathartics. This treatment will prepare the primæ viæ for the use of tonics. It also prevents that engorgement and congestion of the hepatic organs, which often proves so troublesome in the late stages of the complaint. If the sagacity of the physician could at all times discover the first commencement of disordered action, we are inclined to believe, that by an early administration of cathartic medicines, and in some cases, by abstracting blood from the system early in the complaint, what under other circumstances, would have been a violent remitting, would be converted into a mild intermitting fever.

After the stomach and bowels are thoroughly operated upon, we may commence giving the sulphate of quinine. This medicine, if properly administered during the intermissions, will seldom fail to remove the disease. It should be given, however, in larger quantities, and more frequently, than most physicians are in the habit of using it. It should also be used in small quantities, for a considerable length of time, after the paroxysms have subsided. By neglecting this, we frequently find after a little time, that the disease will return.

Before concluding these very cursory remarks upon the treatment of fevers, we wish to call the attention of professional men in this city, to a subject of great importance in practice. Perhaps in no city in the world, is there such a great variety of human beings as in New-York. From the east and from the west, from the north and from the south, from the burning regions of a tropical sun, and from countries covered with eternal snows; people of every complexion, and of every tongue; and religionists of every creed, are here assembled together. Consequently, until they become acclimated, and even afterwards, they retain more or less of constitutional peculiarities derived from physical as well as from moral causes. In addition to these modifying circumstances, we have another evil of extensive prevalence. We have reference to the venereal disease. The vitiating and contaminating effects of this poison upon the constitutions of those who have been affected by it, is very great. All these things should be carefully considered by the physician; for there can be no doubt, that they all have a tendency to impress upon different diseases, important peculiarities, which materially modify the nature of the disease, and which should be well understood, in order that the complaint may be judiciously treated. Nothing so particularly distinguishes the able practitioner, from the mere routinist, as this comprehensive

knowledge of the nature of all those causes, which so powerfully operate upon the physical structure of man, and consequently upon those diseases to which he is liable.

ART. VIII.—*Observations on the Surgical Treatment of Ischuria, or Total Suppression of the Urine. By L. DEPEYRE, M. D. of New-York.*

SUPPRESSION of urine is usually classed among diseases of a grave and serious nature. The forcible introduction of the catheter, puncture of the bladder, and cutting into the urethra above the stricture, are the ultimate means employed in order to evacuate the bladder, and to relieve the sufferings of the patient.

These three operations, of which the danger has been much exaggerated of late, present a prospect of success, but at the same time, they are accompanied with so many inconveniences, that I have experienced great regret, whenever I have believed myself compelled either to resort to them, or have witnessed them when performed by others. Previous to proposing a more mild, humane, and I will add a more rational treatment, it may not be amiss to give a brief sketch of the inconveniences which result from the ordinary methods employed.

The forcible introduction of the catheter, recommended as it has been by high surgical authority, cannot be executed, unless by a most practised hand, without occasioning the most lamentable results. Dessault himself was not always able to prevent the formation of false passages, and it is well known that death, or at least often incurable urinary fistulæ, are the results of forcible catheterism when badly executed. The partisans of this operation, have distinctly perceived the great difficulty with which it must necessarily be accompanied, and have accordingly entered into very minute details, in order to give confidence to the young and timid practitioner. The deserved reputation of the two great supporters of this operation in France, Messrs. Boyer and Roux, is nevertheless of little weight when balanced against the difficulties, or the want of success, with which it is invariably accompanied.

Let us suppose that we are to perform this operation. We attempt to introduce forcibly a catheter of one or two lines in

diameter, through a stricture which scarcely permits the passage of a few drops of urine. This obstacle is either caused by spasm, or by an actual thickening of the mucous membrane, and of the submucous tissue, and most frequently the two causes are in operation at the same time. The spasm being itself the result of an accidental excitation, either general or particular, and which readily occupies the morbid portion of the urethra. We undertake then to destroy this spasm, by introducing an instrument, which in itself is enough to bring on spasmodic contractions of the most violent kind. This instrument is either straight, or more or less curved, according as the surgeon may choose to consider the line of the urethra. To arrive in the bladder, we are to pass through a stricture either callous, soft or purely spasmodic. Whatever may be its nature or situation in the urethra, considerable efforts must be made by the operator to overcome the obstacle, by such an instrument. It is precisely as if we were pushing a blunt instrument against a body which it is impossible to *fix steadily*, and which escapes from the action of the instrument. The part, too, which it is requisite to traverse, is more solid than the sides of the canal, which are to be carefully respected. All these difficulties are certainly much increased, when the stricture occurs at the beginning of the sub-pubic curve, and it is precisely at this spot, that these strictures are most commonly seated. From these considerations, we can readily imagine how much address and experience are requisite, to maintain the end of the sound in the proper direction, and when to this we add the extreme anguish of the patient, and the uncertainty of final success, we may reasonably hesitate before resorting to the forcible introduction of the catheter.

Dessault assures us, that he never saw but one case where puncture of the bladder appeared necessary; and in a practice of twenty years, Roux had never been compelled to resort to it. Its dangers have doubtless been much exaggerated; but is it prudent, is it humane, to resort to an operation which may be dispensed with? Upon the supposition, however, that all other means have failed, and that a surgical operation is imperiously required, we should give the preference to the puncture of the bladder.

The most ancient mode, that by the perineum, invented by Tolet, and modified by Dionis and others, down to the present day, has been successively extolled, condemned, and calumniated. Its partizans defend it, because the opening is made underneath the bladder, which is accordingly freely evacuated, and it is also made in that part of the organ itself, which being in a great

degree fixed, is less affected by the movements which must occur in other parts, as this organ is alternately filled and evacuated. On the other hand, it is objected, the operation performed in this spot is difficult in itself, and may lead to wounds of the prostate, vasa defferentia, seminal vesicles, and moreover, the soft parts through which it is necessary to pass, may give rise to urinary infiltrations. At present this operation is pretty generally abandoned.

Puncture through the rectum was first suggested by Fleurant about the year 1750. Astley Cooper has observed, that beyond the prostate, there exists a triangular space, at the anterior part of which is found the angle of union of the vesiculæ seminales, the sides of this triangle are formed by the vasa defferentia, and the base, by the fold formed by the peritoneum, as it is reflected from the posterior portion of the bladder upon the rectum. The puncture must be made in this space, and according to Cooper, the trocar should perforate about three quarters of an inch behind the prostate. These directions are excellent, and by following them attentively, which, however, is not always very easy, we should completely succeed, provided the anatomical disposition of the parts were invariable; but from the observations of Carpue and Senn, we learn that the peritoneum is sometimes so reflected, as to leave a space of only a few lines from the prostate. In these cases, we should have inevitably infiltrations into the abdomen, and if to this we add the danger of causing urinary fistulæ through the rectum, we have stated enough to induce us to renounce this operation.

Puncture at the hypogastrium is very easily executed, but it has been often attended with serious results. Sharp has given an instructive case, in which the rectum was perforated by this operation, and the urine escaped per anum. This may occur in very meager individuals, and when a long straight instrument is employed; it may easily be avoided, by using a curved trocar. Abernethy has recommended to dissect through the integuments and linea alba, then to make use of a small trocar, which must be immediately withdrawn, and an elastic bougie substituted in its place.

It is objected to this operation, that the bladder is not sufficiently evacuated, but this appears to be disproved by the fact, that the urine is discharged with great ease, even when the patient lies on his back, and that a complete evacuation may be obtained by a simple change of position. We give the preference to this operation, for the great ease with which it may be performed, its comparative safety on account of the little im-

portance of the parts through which we pass, and the readiness with which the wound heals when the canula is withdrawn.

Urethrotomy is performed upon almost every part of the canal beyond the stricture; and when the urethra is laid open, a catheter is introduced through the incision into the bladder. This method has never had many partizans, and it labors under this disadvantage, that it may be performed, and yet without obtaining the desired success, or in other words, without being able to introduce a catheter into the bladder. In many cases, there doubtless exists but a single stricture, but we find often more than one, and even seven have been observed in the same canal. The works of authors who have treated of the diseases of the urinary passages, are filled with cases in which several strictures of different lengths occur in the same individual. I have just now under my care a patient, who came to me with a stricture two inches from the external meatus. This being removed, a second stricture was found at three and a half inches. I have already passed to the extent of seven inches, and the obstacle is not yet entirely traversed. Cases of this kind, I am aware, are of rare occurrence, but strictures of eighteen lines in length have occasionally been submitted to my care. Professor Lallemand has mentioned cases of stricture extending to the neck of the bladder, and urethrotomy would evidently be of no use under such circumstances. It may be contended, that an experienced surgeon can judge, by the concomitant symptoms, whether more than one stricture exists; but we deny that any one of these symptoms can be considered as an unerring index of the state of the canal. A stricture of moderate length may convey the impression that several strictures are present; and, on the other hand, many points of the canal, not yet much strictured, may deceive the surgeon, because the urine passes *per saltum*, even up to the moment when complete suppression takes place. Let us suppose that in this case recourse is had to urethrotomy. It would be performed between the first two strictures, and the sound would still meet with an obstacle in its passage to the bladder. But if the results of this operation are shown to be uncertain, it may also be remarked, that it is also not unfrequently attended with serious consequences. An incision into that part of the canal which traverses the scrotum, may be followed by infiltration of urine into the cellular tissue of these parts. In corpulent persons the same thing may occur in the perineum. These incisions are often known to change into difficult and tedious fistulæ; and incurable strictures we well know to be the common result of wounds of the canal which have gone on to suppuration. The

observation of Lallemand on this subject, in the second part of his work, may be consulted with advantage.

I have thus taken a rapid view of the inconveniences resulting from the various surgical means employed in ischury, and I am not apprehensive of being charged with having exaggerated their dangers, for every surgeon of much experience must have had frequent occasions to deplore the necessity of resorting to these operations. I am inclined, however, to think, that this necessity does not exist, and that, by pursuing a different method, we may succeed in re-establishing the course of the urine, without having recourse to sounds, and, even if we are compelled to use them, the hazard of making false passages is entirely avoided.

As I have already explained, the spasmodic condition of the canal itself is often the cause of ischury. In this case, the spasm is seated in the neck of the bladder, or in the membranous portion of the urethra. Without entering upon an explanation of all the causes which determine the spasmodic action to these parts, we would merely recal to mind, that spasm is essentially a morbid exaltation of sensibility, and that with those who are subject to spasmodic ischury, the neck of the bladder and the membranous portion of the urethra have been previously irritated. In illustration of this, we might cite deep seated blennorrhagies, the external or internal use of cantharides and chronic discharges or gonorrhœa, the seat of which has been so well determined by Professor Lallemand. Individuals with affections of the prostate, and spasmodic ischury, are invariably affected with this morbid exaltation of sensibility; and we may rationally inquire whether it is not better to pay some attention to the predisposing causes, than simply to regard the actual effect. Few persons would probably act in this manner, and yet how frequently do we see a different course pursued. The moment a surgeon is called to a case of retention of urine, a formidable number of instruments are presented to the patient; a sound is introduced as far as the obstacle; repeated efforts to pass it are made in vain; a number of instruments of different sizes and shapes are successively introduced; the position of the patient is changed, and after repeated efforts, nothing finally is done, except producing a great increase of irritation. We are soon compelled to lessen the nervous *erethism*;—then follow, in turn, bleeding, baths, and antispasmodics. We are now adopting the proper course, and these means of themselves, if employed at first, would probably have succeeded. But let us suppose the disease to be of a more obstinate character;—a bleeding to the extent of 3 xvij. has not

succeeded ;—a second bleeding has had no better effect : anti-spasmodics have become powerless, and emetics, purgatives, and baths, have only produced a loss of time, and the ultimate operation seems inevitable. This, however, we do not believe to be required.

It is not by general depletion that we are to combat spasm, but by copious topical bleeding. We are not to direct a bath for half an hour, but a demi-bath for three hours, if necessary, and in which we would allow the patient to faint. We are not to fear the application of leeches, any more than we are to confound their effects with those arising from general depletion. If, however, it should, against all probability, happen that the urine is still retained, we have, in some cases, resorted to the use of tobacco glysters, with invariable success. This is usually followed by complete and prolonged deliquium.

This treatment, with some modifications, is applicable to ordinary retentions, occasioned by stricture. In these cases, as we have before remarked, there exists a state of spasm, which has its seat in the stricture, for this part being affected with chronic inflammation, and its sensibility much increased, a slight change of temperature, or a very small alteration of diet, immediately affects the stricture, and retention takes place. To those who are unwilling to admit the existence of spasm, and suppose that the simple tumefaction of the stricture is sufficient to account for retention, we may inquire under what circumstances the sound passes the stricture. The instrument does not enter by degrees, but suddenly, after sustained pressure. If we succeed with a very small sound, we may frequently introduce immediately afterwards a much larger instrument ; and again, as if by caprice, the spasm is so intense that nothing can be introduced.

The antiphlogistic treatment of itself alone is sufficient, in most cases, to produce a discharge of urine, particularly if we insist with firmness upon leeches, demi-baths, and emollient fomentations to the perineum. Out of ten cases, at least eight will yield to this treatment ; and with those which obstinately resist, we have had recourse to the following method, which has been invariably attended with complete success.

The patient being extended upon his back, I fill a common injecting syringe with olive oil, a little warmed. The canal is forcibly, but gently distended by this means ; then withdrawing the syringe, and holding firmly the end of the penis with the left hand, in order to retain the oil, I press the anterior part of the canal with the right, so as to force the oil to pass the stricture, and enter the bladder. This operation is repeated

many times in immediate succession, until I perceive that the oil has passed the stricture with more ease and with less pain. I then have recourse to the catheter, and with little trouble succeed in passing the stricture.

In the early part of January, I was called in consultation by Professor Stevens, to a case of retention, arising from a stricture of long standing. The patient was about thirty years old. Some years before, he had had complete retention, which resisted the usual remedies, and Dr. Stevens had punctured the bladder through the rectum, with complete success. The stricture, treated by dilatation, had merely been palliated, and the patient became gradually worse, until it had terminated in complete retention. Catheterism had been employed in vain, and the day before our consultation, a rupture of the bladder and rectum had doubtless taken place, for there was an abundant discharge of urine per anum, to the great relief of the patient. We found him still suffering under retention as intense as before; and it is worthy of remark, that there was no discharge of urine by the anus, although the bladder was much distended. This was about 9 in the morning. Thirty leeches were immediately applied to the perineum, and as soon as they came off, the patient was placed in a warm bath, where he remained until deliquium was nearly induced. At noon there was no relief; thirty leeches more were applied, which was followed by an abundant discharge of blood from their punctures. With much effort the patient voided some drops of urine. At half past 8 in the evening, we determined to resort to the method which I have detailed above. Soon after the introduction of the oil, I was enabled to introduce a small solid catheter, which I then immediately withdrew, and supplied its place with a larger one, which passed readily into the bladder, where I maintained it in a secure position.

The foregoing case, which is so remarkable for its obstinacy, may serve to prove how advantageously the mode of treatment which I propose, may be employed, instead of having recourse to surgical operations. I might have cited others of a similar nature to confirm my views, but I have selected this one more particularly, on account of the remarkable rupture of the bladder, which occurred spontaneously, by which the urine had been discharged through the rectum, and consequently had placed the patient in the same predicament, as if he had submitted to the operation of puncture of the bladder.* Notwithstanding

* This spontaneous rupture of the bladder and rectum, without being accompanied by any infiltration, is very remarkable. The fact is, how-

this, the disease had persisted, and he would have been compelled to submit to another operation, if we had not succeeded in introducing a catheter.

The treatment which I have proposed, of dilating the urethra with warm oil, is as simple as it will be found efficacious. But it should be observed, that it will be prudent to defer its use, until leeches, baths, &c., have been duly administered. We may then employ it with much less pain to the patient, and with more certainty of success. The practice is not new, but has been proposed already, as I believe, by Soemmerring. As this author, however, did not allude to any preparatory antiphlogistic treatment, practitioners confined themselves merely to the use of the oil, and finding it to be of no service, have abandoned its use altogether.

I have entered into considerable detail, as to the various modes of puncturing the bladder, in order to point out the inconveniences which may result from having recourse to those operations, which I am induced to consider as improper, but which are nevertheless often adopted. But although I give the preference to the hypogastric operation, yet I must be permitted to repeat, that the number of cases is extremely limited in which any surgical operation whatever is at all necessary.

ever, incontestible. The patient himself supposed, that the puncture which had been made formerly by the trocar, had again opened. This occurrence was accompanied with great relief, which lasted for six hours, at the expiration of which time the desire to void urine again commenced, but not a single drop passed either by the urethra or anus. Doubtless at this period, the parallelism of the openings in the bladder and rectum did not correspond; but in this case, there ought to have been infiltration between these two viscera. The opening certainly could not have cicatrized; but how are we to account for the circumstance, that when I was called in consultation, the great distention of the bladder, accompanied with such violent efforts to pass the urine, had not been sufficiently powerful to force it again through the ruptured part?

REVIEW.

ART. I.—*The Anatomy, Physiology, and Diseases of the Bones and Joints.* By SAMUEL D. GROSS, M. D. Philadelphia. John Grigg. 8vo. pp. 389. 1830.

(Concluded.)

WE come now to diseases of the bones, which we consider the most imperfect chapter of the work. It wants method and arrangement, and is entirely deficient in that philosophy which can make the subject interesting. The definitions are inaccurate, yet we cannot blame the author, when so little has been done to systematize this part of medicine. We shall endeavor to give some scientific form to this department, and present it in such a shape, that its practical application will be simplified, and more useful.

The diseases of the bones have furnished several important works, yet no two authors appear to agree in their classification. Take for example caries: Mr. Crampton says, "caries is bone deprived of life." Mr. Liston limits caries to such "ulcers in bones as resist the natural efforts of the constitution towards their cure, and require the active interference of art." Mr. Lizars terms "spina-ventosa, an aggravated species of exostosis, where caries follows with suppuration of the bone;" and Scarpa has confounded caries with necrosis, and Mr. Lawrence in his lectures defines it to be a morbid ulceration of bone, preceded by inflammation, and attended by the same kind of suppuration or formation of matter.

I. *Ostitis*.—Inflammation of bone. We believe that all authors admit, that this can ensue in the same manner that inflammation would take place in soft parts, but until Mr. Howship defined its pathological characters, our knowledge was exceedingly limited. To many it would seem impossible that this structure was susceptible of this process; yet when we consider the envelopes of its particles, we shall not be at a loss to account

for those previous degrees of morbid action of which it is capable.

1. *Adhesive Inflammation*.—This is apparent in union of fractured bones, and is the *healthy ossific inflammation* of Mr. Hunter. There are three stages of this process, which ultimately produce *callus*, and at other times a fibro-albuminous cicatrix, which will be found in the neck of the thigh bone, the patella and olecranon. By what means this last is produced, is unsettled by physiologists,—some attribute it to defect of the periosteum, and others to defective nutrition.

2. *Acute and chronic inflammation*.—There is very little known upon this subject, for it has been very partially investigated, yet from its terminations our deductions may be considered accurate, for we have enlargement from interstitial deposition, supuration, formation of matter, and ulceration and mortification, and these are the terminations of morbid states in soft parts. We must confess the diagnosis from periostitis is exceedingly difficult. It is more slow in its progress, and the tumor is hard and unyielding, while in periostitis the tumor has some elasticity; the pain is not great, while in periostitis it is considerable. In the first, the system does not so soon sympathize, nor are the symptoms so violent. The terminations of *ostitis* are resolution, formation of pus and necrosis, or death of the whole or part of the bone. The first termination is always accompanied by a morbid increase of the bulk; this Mr. Lawrence and Dr. Cumin call *hyperostosis*. We are indebted to Mr. Howship for some interesting materials in the elucidation of the morbid anatomy of this division. He says, the first perceptible change produced by inflammation, is a uniform enlargement of the longitudinal canals, effected by the lining membranes, which absorb in a gradual and equal manner the substance in which they are encased. The membranes next become thickened, tuberculated and granular, and absorption now goes on in so rapid a manner, that the sides of the canals are in many points scooped out into hollows. When inflammation has proceeded further, the affected portion of bone becomes tumid, and a new deposit of earthy matter is observed to have taken place.

II. *Osteo-apostema*.—This expresses the formation of matter. The walls of the longitudinal canals are absorbed, and communication takes place with the medullary cavity. Mr. Hey, in his practical observations in surgery, mentions two cases, and Dr. Cumin relates the following interesting one.

“A young lady had for more than two years suffered from disease of one of the fingers, which, from its base to its middle, was

swollen to three times its natural size, while it was shrunk and wasted towards the point. The swelling was white, shining, and slightly elastic, but not fluctuating; and on its surface were three pale fungous ulcers with thickened edges. On dividing the diseased parts after amputation, the knife passed through a considerable thickness of cartilage, and then entered a cavity containing pus, and the remains of the first phalanx of the finger. The fragments of the bone were much eroded, full of holes, and extremely light. The articulating surfaces of the bone were perfectly sound, and the cartilage which formed the posterior part of the swelling was found to contain a portion of new bone. The bone in this, as in almost all cases where purulent matter has formed within its substance, was in a state of decay, but certainly not necrosed; for interstitial absorption seemed to have been going on in it to the last, and no line of separation could be detected between the diseased parts and the healthy articulating extremities."

III. *Caries*.—We can by no means agree with our author in his general observations upon caries, especially in his division, which he forms thus :

"Caries has been divided into different species, according to the nature of its causes, or the appearance of the diseased bone : 1. into caries from local or constitutional causes ; 2. worm-eaten caries, or caries which penetrates the whole substance of the affected bone, and gives it a perforated appearance ; 3. carious caries, or caries attended with large fleshy granulations. Caries may be distinguished into superficial and deep seated ; a division of far more practical importance than any that has hitherto been offered."

We believe if we confine ourselves to the two states of the bone, viz.: its inflammatory and ulcerative stage, we shall have more just views of its pathology. For what practical effects can be applied to his divisions? Do they express any thing which can give just opinions for treatment? Mr. Liston, who has written a very excellent essay upon this subject, adopts this simple form, and he has been followed by Mr. Lawrence. Dr. Cumin gives two species of caries, viz.: caries exedens, and caries ossificans. The first refers to a "process of destruction, without any attempt to repair the injury," and the second to "a process of destruction, accompanied by a morbid and feeble effort to form bone." Examples are found in the extremities of long bones, after their articulating cartilages are destroyed by ulceration, and by the bodies of vertebræ after the destruction of the inter-vertebral substance. This sometimes produces

new bone in the adjacent bone, though it is never accompanied by any attempt of reproduction.

Necrosis.—The death of the bone can be referred to inflammation of the periosteum, or the medullary web of the cylindrical bones. In what manner this last effects this, is not well understood. But suppuration may be induced within the cavity of the bone; effusion may ensue in the interstices of the medullary membrane, and the membrane may be destroyed, and the bone would die from the cause which would operate upon it, if the periosteum were displaced by any accident. Some physiologists suppose that by the swelling of the medullary membrane, an expansion of the bone takes place, which is incompatible with its vitality. Now we do know, that effusion takes place into its interstices after fracture, and in almost all cases enlargement ensues. Scarpa has noticed this, and has called it *expansion*.

Suppuration is another cause. Whenever this occurs, the constitutional irritation generally produces death. If, however, this does not happen, then the bone dies from within outwards.*

“This may affect either part or the whole of the diaphysis, which is then separated from the periosteum and epiphysis, which is rarely killed. In process of time the dead portion or portions (*ramenta*) become enclosed more or less completely by a thick shapeless cylinder of new bone, with or without openings in its sides, and which is placed between the epiphyses, and covered by the periosteum, which is much thickened. If death takes place at this period, the bone thus formed is found to contain the original shaft, loose and dead. If life be still prolonged, the old bone, generally piecemeal, is gradually brought to the surface through the openings in the new osseous case, and expelled.”

We should attend to the cause of the death, and to the agent of its production in the history of necrosis. We may refer the first to the disease of the periosteum and the medullary membrane. With regard to the second, it is generally believed, that the periosteum is the producing power, for it is ascertained, that when the periosteum is unimpaired, the deposition of bone is regular, and when it is destroyed, regeneration is imperfect or deficient.

It is said that regeneration is most frequent in the *diaphysis* of cylindrical bones. The *humerus*, the *femur*, and *tibia*, have

* Craigie's Elements of General Anatomy.

been reproduced. Three cases of the ulna, one of the radius, clavicle and scapula, and some cases of the total regeneration of the lower part. Flat bones are not regenerated.

This chapter is satisfactory as far as it goes, yet we cannot but censure in authors the very hasty and careless manner in which important subjects such as these are treated. There seems to be so much confusion on the subject of caries and necrosis, that we are continually at a loss to which to apply their treatment, from the very inaccuracy of their definitions. It is very evident that the subject must be obscure, or more system would have grown out of the very many investigations which have been instituted in the examination and elucidation of these diseases. We can hardly open a work upon surgery, or take up a journal in which some new nomenclature is not recommended or introduced. We must perhaps wait until other subjects are exhausted, before this can excite an interest commensurate with its merits. We are very certain if the lights of physiology and morbid anatomy could be brought to radiate upon this very interesting inquiry, much valuable information could be elicited. At any rate, the attention of all practical surgeons might be turned to it, which would repay well the labor they bestow, and save many limbs, which would be the boast of restoring to the sufferers a pleasure too little reciprocated in our days.

Spina Ventosa.—This disease is arranged by some writers under caries, and if we look at the symptoms, we shall not wonder that so little knowledge of it is attained. Dr. Parr gives osteo-sarcoma, sideratio, cancer, gangrene, and sphacelus, ossis teredo, fungus articuli, arthroace exostosis, predarthroace. From this it is apparent, that writers have been entirely ignorant of its morbid character; indeed the most distinguished surgeons differ entirely in its description. Portal and Petit consider it a variety of exostosis. Scarpa says it differs only in degree from exostosis and osteo-sarcoma. Munro says it commences in the marrow, which cannot be correct, for how can an organic secretion be capable of orgasm, healthy or morbid? The definition and seat, as given by our author, is incorrect.

Definition.—*Spina-ventosa* is a disease of the osseous tissue, attended with interstitial generation, and an expansion of the attenuated walls of the bone at the seat of the disorder.

Seat.—The disease may attack any part of the osseous system, but its most general seat is in the shafts of the long bones, especially in those which enter into the composition of the hand and foot."

The seat is in the medullary web of the epiphysis, and in the cancellated structure. The periosteum becomes thickened, and matter breaking through it, the cancelli are soon absorbed, and flabby granulations supply their place. We think, if surgeons would consider this an inflammatory disease, much benefit might result; at any rate, the discordant opinions which now prevail, do nothing to bring the treatment into any thing like a scientific form, and we prescribe for the name of a disease, in utter ignorance of its pathology. We think, then, in referring this to the diseases of a phlegmasial character, it is more simplified, and the treatment would, in all probability, be more successful.

Rachitis.—We see no reason for separating this from molities ossium. Dr. Cumin includes them under the term osteomalakia, and gives two divisions, osteo-malak-infantum, and osteo-malak-adultorum. In the first, the bones have a spongy, reticulated texture, much cartilaginous substance, and when dried, appear like bones steeped in acid. In the latter, they are mere shells, and contain large cavities.

Fragilitas ossium.—We see no reason for making this a distinct disease. We believe it to be symptomatic of other affections, as cancer, syphilis, &c.

Periostitis.—The terminations of periostitis are, effusion of coagulable lymph into its substance, or between it and the bone, constituting *node*, and the tumor *gumma*. This effused lymph may become ossified, and constitute the *ossific node* of Hunter. Loose bones, masses or plates, are seen on the surface of cylindrical bones, such as the tibia and ulna, as the result of this modified action. The anatomical characters of this formation are, great vascularity, irregular cavities, instead of regular arranged longitudinal canals. Craigie says:—

“In the skull of a child under 7 before me, periosteal inflammation has produced on the parietal bone a circular area the size of a shilling, of minute spherical or spheroidal eminences, surrounded by a smooth whitish ring, and that enclosed by a darker colored ring. The circular area, with rough eminences, marks the space from which the periosteum was detached. It is thicker, and less translucent than the rest of the bone. The white ring indicates the tract where the pericranium was inflamed, but not detached.”

If the inflammation be acute, it terminates in ulcerative absorption of the subjacent bone, a denuded, rough, and reddish surface. This corresponds to *insensible* exfoliation, and *absorption*, produced by tumors, aneurisms, &c.

When suppuration ensues, necrosis follows, for the power of nutrition is lost, and exfoliation takes place.

Caries and *osseous deposit* is another termination. The latter constitutes exostosis and osteo-sarcoma of some authors. Here we have again to notice the great confusion in the nomenclature. Mr. Lawrence limits this term to a "humor arising from, and seated upon, a bone," and confines it to tumors of a bony nature. Dr. Cumin agrees with him, but he has three species. *Species* 1st. Exostosis cellularis. 2d. Exostosis laminata. 3d. Exostosis eburnea. The first tumor he says consists of an external crust, within which are very numerous bony partitions, together with a quantity of softer substance, of the nature of mucus, jelly, cartilage, or fatty matter. The second consists of a mixture of bony excrescences and cartilage. The third has the solid texture of ivory. It is unnecessary to follow authors in their various divisions; these are of no practical importance. This subject, like that of ulcers, has been spun out to a most immoderate length by many writers, without any benefit to the practitioner. We have, for instance, the true and false exostosis, the periosteal and medullary, the cartilaginous and fungous. It appears to us, that the medullary membrane and the periosteum only have the power of inducing these vices.

Osteo-sarcoma.—Cooper, in his Surgical Dictionary, refers, under this head, an exostosis of the clavicle, and fungus of the antrum. Dr. Cumin appears to view this disease in its true light; he thinks it should be limited to a "degeneration and morbid growth of the lining membranes of the longitudinal canals, or cancelli of bones, accompanied by the absorption of the solid substance of the bone." The anatomical characters of this disease are very various, and it might be split into as many species as the fancy could suggest. There is one circumstance connected with this affection which is deserving of attention, that it is generally attended with pulsation, and it might be confounded with aneurism. This does not appear to be noticed by writers, and is overlooked by Mr. Lawrence. The following case, by Dr. Cumin, is exceedingly interesting.

"The whole inner side of the left knee-joint, and particularly the internal condyle of the femur, was occupied by a soft pulsating tumor, which, when firmly compressed, diminished distinctly, and the fingers seemed to sink into an empty cavity. Compression of the common femoral artery stopped the pulsation of the tumor. The knee-joint was stiff and contracted, and the soft parts in the

ham thickened. The patient complained a good deal of pain in the tumor, which was stated to be of ten months standing; and his health was considerably affected. After amputation of the limb, and the injection of the popliteal artery, the tumor was found to be about the size of a large fist enclosed in the periosteum, and formed within the substance of the inner condyle of the femur, which was extensively removed by absorption. It occupied also a portion of the articulating surface, the remaining portion of which yielded to the pressure of the finger like an elastic shell, in consequence of the excavation within. The tumor was closely invested at its lower part and on the inner side, by the capsular ligament, and by that which is stretched posteriorly between the femur and tibia. Its posterior surface lay close upon the popliteal artery, from which it was separated only by a small quantity of cellular membrane. All the parts exterior to the capsule were in a natural state, with the exception of a slight displacement of the adductor tendons. The cavity of the knee-joint contained, as already stated, a portion of the projecting tumor, together with a small quantity of bloody serum; and the parts within the joint were more vascular than natural. The middle and the superior internal articular arteries were enlarged, and the latter ramified over the surface of the tumor, and sent twigs into its investing periosteum. The tumor was spongy and elastic; and when laid open some days after the amputation of the limb, was found to contain a soft, brain-like matter, which fell out as soon as the incision was made."

Sir Astley Cooper calls this affection *fungus exostosis of the medullary membrane*.

Angiectasis.—Dr. Craigie mentions this disease as proceeding from a peculiar anormal development of the arterial system of bones, in which they become enlarged, and form a cyst in the substance of the bone, and gradually affect its absorption. Cases of this kind are mentioned by Scarpa, Lallemand, and Breschet.

We have thus noticed the principal diseases of the bones, and ventured to supply the defects in this work. Our great objection to this chapter is the uncertain and undetermined pathology which attaches itself to every description. Would it not facilitate the treatment, if these diseases were referred to the three following heads, viz., inflammation of the bone, inflammation of the periosteum, and inflammation of the medullary membrane? If this could be done, we think much benefit might result. As far as we can ascertain, most authors refer them to one of these classes. The arrangement would stand thus;

First. *Ostitis*. Inflammation of bone.

Species 1. Adhesive inflammation.

2. Acute.

3. Chronic.

Second. *Periostitis*. It would terminate,

Species 1. Node.

2. Gumma.

3. Ossific node of Hunter.

4. Caries.

5. Exfoliation.

6. Necrosis.

7. Exostosis.

Third. *Inflammation of the medullary membrane* may terminate in,

Species 1. Necrosis, killing the bone, from within outwards.

2. Osteo-sarcoma.

3. Osteo-apostema, or formation of matter in the osseous substance.

4. Fungus exostosis of Sir A. Cooper.

We have no doubt, if the attention of pathologists were turned to the investigation of these three divisions, that the treatment would at least have this recommendation, that it would have a more certain object than it now possesses. It cannot be wondered at, that so much empiricism exists, when authors are so little agreed upon terms. It is vain to rest upon anatomical characters alone. There is so much to deceive and confuse, that without great experience the whole subject will be thrown into a chaotic mass. Our knowledge is unquestionably very defective upon this important branch of surgery; and we may say our treatment consequently is very empirical.

We now come to the consideration of dislocations, and we shall proceed to notice such omissions and errors as occur.

Dislocation of the Head and Trunk.—The author has omitted a notice of the *Hylo-maxillary-ligament*, which is of some importance, and should not have been left out in the description of the structure of this articulation. We would here call the attention of our readers to the necessity of a complete understanding of the action of muscles. No fact is more pressing upon the surgeon, if he would gain a perfect knowledge of the reduction of the different dislocations and fractures. For what avail all the directions, if there be no association to connect our practice? We acknowledge that it is by no means an easy acquirement to retain in our memories the motions which are performed, but we believe, that the difficulty would be in a great

measure overcome, if the principles of muscular action were at first properly pointed out. But, that we may be perfectly understood, we will take the shoulder joint to illustrate our meaning.

Dislocation of the Scapulo-humeral articulation. To understand perfectly the accidents of this joint, the form of the shoulder in its natural condition, and under morbid displacements, should be familiar to every surgeon. The anatomical structure in all its relations, cannot be too minutely inspected, viz.: the bones, muscles and ligaments, all of which should be thoroughly known. The bones which enter into its composition, are the superior part of the humerus, and *glenoid cavity of the scapula*.

The *humerus*.—The superior portion of this bone is divided into its *head, anatomical and surgical neck*. The *head* is a small segment of a large sphere, and its axis looks forwards, downwards and outwards, and is not in a plane with the body of the bone. At its union, there is a groove which is called the anatomical neck, in contradistinction to the *surgical neck*, which lies below the tuberosities, between them and the body of the bone. The glenoid cavity is much smaller than the head of the *os humeri*, and if the muscles of the joint did not afford a strong protection, dislocation would take place, from the mere weight of the limb. The bicipital groove has attached upon its anterior margin the pectoralis major, and upon its posterior the latissimus dorsi. These insertions are important, for if luxation takes place when the elbow rests upon the ground from a fall, these muscles will act upon the bone, as a lever of the third order; consequently, as the power is very near the movable point, the head of the bone will be drawn inwards.

The *glenoid cavity* is very superficial, and is very favorable to the varied motions, which are here performed. Dislocations are in an inverse ratio to the freedom of motion. The perpendicular diameter is greater than the horizontal.

Let us now observe in what manner the joint is protected.

The *acromion*, projecting near an inch before the glenoid cavity, would be fractured, if dislocation were to take place in this direction, but there is no case on record of this character.

The *capsular* ligament is strengthened externally by the tendons of the infra spinatus and teres minor, yet from its distensile power, possesses but a small defence to the accidents which occur here. In what manner do luxations take place, and in what direction? There is a limit to the adduction of the arm, for the thorax will interpose before the axis of the head, if the

bone can be thrown from the glenoid cavity. If the arm is carried backward, the supra-spinatus and deltoid, will prevent the axis from passing too far forward ; besides, directly above it there are the capsule, the coraco-humeral ligament, the acromion, clavicle, and coracoid process of the scapula, which will be a sufficient guard.

But there are many circumstances which will favor luxation inward, because there is no limit to adduction ; the deltoid muscle would assist, and the capsular ligament at the internal part is much the thinnest. Besides, if the elbow be the fixed point, the axis of the head of the humerus will be very near the inferior margin of the glenoid cavity, and the deltoid, pectoralis major, latissimus dorsi, and teres major, would assist in the displacement, and the only resistance would be in the inferior part of the capsule, which is very thin. For these reasons luxation downwards is of frequent occurrence, and the head of the bone will rest between the scapula and the triceps, because the latter muscle and subscapularis muscles being on the stretch, will carry it there.

When *dislocation downwards* occurs, the pectoralis major, latissimus dorsi, and teres contracting, they would fix the elbow to the ground, and the head of the humerus would become the movable point in which they act. The humerus would become a lever of the third kind, the elbow the fulcrum, the scapulo-humeral articulation the resistance, the latissimus dorsi, teres major, and pectoralis major, would represent the power. In this case, violence conjoined with muscular action, would be necessary, but if dislocation occurred from muscular action alone, then the deltoid would represent the fulcrum, and the power and resistance would be unchanged. It is very evident, that this dislocation would be difficult of reduction, for the length of the arm of the lever from the power is equal to the distance which separates the point of attachment of the deltoid from the pectoralis major ; but in the preceding case, it is equal to the whole distance which exists between the insertion of that muscle and the extremity of the elbow.

Dislocation forwards is not frequent, although it is difficult to carry the arm sufficiently backwards, that the bone may form an acute angle with the glenoid cavity. But, when we consider the actions of the subscapularis, pectoralis major, and latissimus dorsi, and view their direction to the bone, the cause is evident. We might enter into more minute details, but our object was to deduce some rules for scientific practice, and if we are understood, we think, that practice founded upon such rules, would be very beneficial, especially to the young practitioner. It has

always been our aim to free surgery from the mass of empiricism which obscures its true value, and to place it upon the only stable foundation which it justly claims. Could a work be written, (and we see no reason why it should not,) discarding all the uncertain precepts which disfigure this important branch of medicine, and recognising no other doctrines than those which flow from the true sources of knowledge, we might hope soon to arrest from the presumptuous interference of quacks, the dangerous weapons which they now wield, to the manifest injury of the community. There appears to be a most extraordinary sympathy for these nondescripts, and in the late trial of Long in London, the ermine of the judge was soiled by a too evident bias to his cause. We must confess, that we have no one to censure but ourselves, and until we can agree upon certain principles, we must expect to be elbowed by a race who regard not the license of a college as necessary to a respectable calling, or successful prosecution of a lucrative business. The error lies with us, and if we do not take speedy and effectual means to remove it, we shall pay the penalty which such criminal remissness deserves.

The great objection that we would urge against this work is, that it is not sufficiently American. We think, that Dr. Gross' industry might have been divided, and his attention directed more to the improvements of this side of the Atlantic. Our geographical position peculiarly fits us to decide upon the merits of European inventions. To some this may savor not a little of vanity, yet we are confident that the fact is fully capable of being borne out in its full extent. There is no national feeling to interfere in our opinions, and divert them from their true inclination. The great ocean which rolls between Europe and America, places us almost in the position of posterity, where every work comes to us stripped of all extrinsic bearing, and we are qualified to pronounce honestly upon its merits, for there is no friend to please, and no foe to apprehend. For these reasons, many improvements of modern surgery have received in this country judicious combinations. It is very true, that we have become in some measure Chinese, with a reputation of better imitators than projectors. But it may be said, that we are too new to establish a practice either in surgery or physic. To this we cannot assent, and we believe, had we assumed our independence in medicine, when we took the liberty to govern ourselves, it would not have been asked us, "who reads an American book." It is time for us to begin to form a school, which shall have something distinctive in its character; and how, it may be asked, can this be attained? We answer, by making

a radical change in the government of our public charities. This is a subject which our limits will not permit us at present to discuss, but we shall take an early opportunity to do so. The point which we wish to press upon our readers, is the palpable and culpable neglect of our institutions, in withholding from the profession the great mass of knowledge which must accumulate there. It should be the duty of every charity to publish its practice, for if the state extends to it its bounty, some return should be made for its favors. We cannot censure Dr. Gross, for it may not have been in his power to have collected materials from our hospitals, although we think he should have applied.

ART. II.—*An Elementary Treatise on Midwifery ; or principles of Tokology and Embryology.* By ALF. A. L. M. VELPEAU, M. D., &c. &c. *Translated from the French, by CH. D. MEIGS, M. D., Member of the American Philosophical Society, Lecturer on Midwifery, and the Diseases of Women and Children, &c. &c.* Philadelphia : John Grigg. 1831. 8vo. pp. 584.

IT is probably owing to the peculiar nature of practical midwifery, that it has received so little attention as a scientific study. This neglect is undoubtedly a consequence of the opinion that labor is a healthy organic function, and it does not ordinarily require any interference of art ; that the duties of the accoucheur may be as well or better performed, and with more propriety, by a female ; and that, therefore, midwifery may be justifiably held in light estimation by the profession.

Labor cannot be called a diseased action, except, indeed, it be connected with abortion or premature delivery ; but it must be acknowledged, at the same time, that interference is not unfrequently requisite. Preternatural positions of the fetus, faults of the female organs, or parts concerned in parturition, and a host of accidental circumstances, make this necessity. Events of this nature demand no less courage than judgment,—no less promptness than knowledge, in order to preserve both the mother and child from peril. It would seem idle, therefore, to expect the required relief in such cases, from one so naturally timid as woman, professionally uneducated, or possessing only a few of the necessary acquirements,—with no other qualification than confident pretension, or at most, a certain tact for the

mere incidental business of a lying-in. One so constitutionally and intellectually unfitted for the duties of an accoucheur, can neither judge as well when nature requires assistance, nor give that assistance as ably as a male practitioner. That a Boivin and a Lachapelle may be produced in contradiction of our assertion, we are well aware; but these will prove only solitary exceptions to a general conclusion, and avail nothing in our judgment. We speak of woman as we ordinarily find her, and not under eccentric circumstances. It is in this view we say, that the knowledge of the anatomical structure, and relative importance of the generative organs, the intricate phenomena of reproduction, the varied investigations in the art, and the treatment of the diseases of women, which should all form a material part of the education of a physician, ought to possess some weight in favor of the employment of a regular medical attendant. The conclusion appears so obvious, that we are surprised that any person should for a moment attempt to dispute it. To the propriety, as far as the difference of sex is concerned, we might be induced to concede much, were it not that medical men are daily and necessarily called upon for advice upon subjects equally as delicate as the management of a labor. When an objection on this point is made by medical men, we feel inclined to believe it can only be the cant of prudery for sinister motives, or the sycophancy of some Sir Archy, as a scheme for pecuniary advantage.

There are other reasons why the intimate study of midwifery should not be neglected in this country. Constituted as the profession is, where all are general practitioners in the most extended sense of the term, and where the treatment of lying-in women by physicians has the popular opinion in its favor, there is no justification for an ignorance of the physiological and practical principles of this department of medical science;—nor can any man claim a pretension to the character of an enlightened physician, who seriously inclines, or conceitedly affects, to consider the art as unworthy the title of a scientific pursuit. Men of the highest mental energy have dignified it by their minute investigations and philosophical inductions; and experience and observation have proved that no branch of medicine possesses superior claims for the continued exercise of the best faculties of the mind, both of the physiologist and philanthropist. We only need recal the often witnessed scenes of agony and despair so highly wrought during labor, to have every better feeling of humanity excited;—we only need look at the phenomena of generation, to discover at once how extended is the field for research, or reflect upon the magnitude of the many questions

connected with the subject in medico-legal inquiries,—to be convinced of the necessity of a precise and intimate acquaintance with a science of the most momentous importance to the reputation, happiness, and life of a fellow creature. These assuredly are objects which should not, nay, cannot be rejected, as unworthy the pursuit of the most gifted. They possess a series of attractions, embracing the widest range of physiology and general knowledge; and for the conscientious physician they possess the additional claim of affording relief where the most virtuous sympathies of our nature are excited into action.

The volume before us is a valuable addition to the catalogue of elementary works on midwifery. Smellie, Baudelocque, Hamilton, Burns, and Denman, have been the most popular text books in this country, and all possess, though in different degrees, much that is rich in precept and description. Each in turn has been superseded in its popularity, in proportion to its possession of the most recent information, until, at the present day, Burns and Denman only, of foreign works, are put into the hands of the student. Of these, the last is by far the preferable. Its proposed improvements, practical precepts, and lucid descriptions, in many respects place it beyond rivalry. We need not attempt an enumeration of the merits of the treatises of Bard and Dewees; the first, as a compilation, has its peculiar value; while the latter has justly been considered as standard authority, not only in this country but in Europe; and we consider it as no mean evidence of its worth, that it is not unfrequently used as reference by M. Velpeau, and always in commendation. Dewees, Denman, and Velpeau, should become the standard works in every private and public establishment; they ought to be in the hands of every physician, and form a necessary part of the study of every pupil. Of the work of M. Velpeau we can only say, that in many respects, it is unsurpassed. To those engaged in research, it is a valuable treatise of reference, not only from its containing the latest investigations of the French school, so well established in its character for physiological information, but is sufficiently full in its remarks upon the opinions of the most ancient writers. It is scientific in its arrangement, concise in its description, and free from any dogmatism in the discussion of disputed questions. The information it contains is evidently the result of experience and discriminating observation.

M. Velpeau has divided his treatise into several chapters, the first of which, containing an anatomical description of the parts concerned in generation, we shall pass over. The second has

reference particularly to the *functions of the sexual organs of the female,—menstruation,—and reproduction.*

In common with other authors, M. Velpeau considers the absence of the menstrual discharge, which is productive of, or at least, in conjunction with sterility, as generally consequent upon some mal-formation of the uterus or its appendages. It must not, however, be understood that an inability to bear children is a universal consequence of non-menstruation. Our author mentions a case subversive of an opinion of this kind, and similar instances will be found related in most obstetrical works. The nature of the menses is generally believed to be innoxious, but our author seems inclined to adhere, in some measure, to the ancient prejudice of its emitting an effluvia capable even of turning milk. This is a harmless belief, although we had thought that it had become long since and justly obsolete, and only referred to as a vulgar notion. The observations on the progress and cessation of the discharge, and its final cause, its seat and source, are concisely made, and will be perused with much profit. M. Velpeau candidly confesses, that the nature of the latter must still remain, *questio vexata*.

The function of re-production in the human species consists of: 1st, generation, or the formation of germs; 2d, of fecundation, or the vivification of the germ; 3d, of conception, or the retention of the vivified germ; 4th, of gestation, or pregnancy; 5th, of parturition, or the expulsion of the germ. When speaking of man, or the mammiferæ, it may be well to bear the terms in recollection. It would lead to more accuracy than generally obtains among physicians, who are apt to use the three first particularly as synonymous. The polypi re-produce themselves by germs; have generation, but no fecundation or conception. The batracians also have germs, but of two species, male and female; these must be mixed, for re-production; but as this takes place exteriorly, there is here generation and fecundation, but no conception. In birds there is generation, fecundation, and conception, but no gestation. In the mammiferæ at length we come to a complete exemplification of the whole phenomena, for here the vivified and conceived germ is developed within the producing body. The term re-production, then, is general in its application; while generation, fecundation, and conception, may exist unconjoined or combined, according to the class of animals under observation.

The nature of the male and female germs comes next under consideration, which, as well the point at which these germs meet in fecundation, and the mechanism of the union, are freely discussed, and the just conclusion is made by the author, that

the systems of performation, paspermy, epigenesis and cata-genesis, &c., teach us nothing in relation to the intimate nature of re-production ; and that, after all the learned show of words, the problem still remains pretty nearly in the same condition as when first combated by the ancient physiologists. The only light, indeed, that we have on the subject, is that afforded by simple observation,—that *after* fecundation, an ovule is detached from the ovary, so modified, “ that it is soon recognised as being similar to the one that produced it.”

We next come to Chapter III., on the *history of gestation*. This is an important point in the study of the physician. Upon a proper knowledge of this, not only may depend the comfort and safety of the patient, but also the property, character, and happiness of those concerned in the discussion of the question of pregnancy in legal medicine. M. Velpeau retains the usual division of good, natural, or uterine,—and bad, unnatural, or extra-uterine pregnancy ; these have each a subdivision in varieties. In uterine pregnancy, the actual phenomena are, the changes of volume, form, position, direction, &c., of the uterus, as well as of its appendages, adjacent organs, and parts in general.

The sympathetic phenomena, or rational signs of pregnancy, we shall notice more particularly. The actual condition of the uterine organs may be known when pregnancy is evident, and thus far these phenomena have their due value ; but when doubt exists as to fetal development, we then, of course, are only to be led to our conclusions by the rational or sensible signs which may be present. Under the first head, we find introduced a graphic description of the symptoms announcing the actual commencement of fecundation. Among these is the peculiar orgasm experienced during a fruitful connexion, the existence of which, as M. Velpeau observes, was long ago inculcated by Hippocrates and Galen. This constitutional movement we need not here particularize, although it has often been the subject of argument in legal medicine, in discussing the question, whether *pregnancy ever follows rape*. The necessity of a sensibility to this orgasm has been doubted by some of the best writers, reference to whose works is made by Professor T. R. Beck, in his excellent work on Medical Jurisprudence.* These objections are chiefly based upon arguments similar to

* Elements of Medical Jurisprudence, vol. I. p. 101.

those adduced by Capuron.* "It is a fact," observes the last author, "and experience has more than once confirmed it, that a woman may become pregnant during the presence of hysteria, narcotism, asphyxia, complete drunkenness, and consequently, without a knowledge of the fact, or of partaking of the enjoyment of the ravisher." That there may be no *recollection* of the enjoyment, we do not doubt; this would naturally be supposed, as a consequence of the palsied condition of the mental faculties under which a female must be laboring, at the time when either of the morbid states referred to, is present. The consciousness of fecundation could only be concurrent with the sensibility to excitement present, and this being, for the time, repressed, any impression then made would pass off coincidentally with the return of that sensibility. This much we will grant; but can it be thence deduced, that there was no peculiar orgasm, or that there was no enjoyment, and therefore, consent, on the part of the person dishonored? How far a mere animal consent, (for under the circumstances mentioned, it could only be such,) would constitute a question of exculpation, does not, we think, require much discussion, though it is upon this point, after all, that the question must rest.

But the argument made use of, in connexion with a state of insensibility, cannot have the same effect upon the question, where such a condition is not present. Conceding the existence of an exaltation of excitement at the moment of fecundation, this will appear very evident. This concession, we think, cannot be resisted, when we take into consideration the fact, that at the moment there commences a change in the volume, form, situation, attitude, structure, and properties of the uterus. To produce this change, a peculiar orgasmic movement seems necessarily indicated, whether we believe in the doctrine of

* "Voici encore une autre difficulté; il est possible qu'un homme accusé de viol, cherche à se disculper, en disant que la femme est devenue enceinte, et que par conséquent elle a donné son consentement au commerce illicite dont elle se plaint. Mais nous ne sommes plus au temps où l'on croyait que les fonctions du système utérin étaient entièrement soumises à l'empire de la volonté, et qu'une femme ne pouvait concevoir sans y consentir. Il est de fait aujourd'hui, et l'expérience l'a confirmé plus d'une fois, qu'une femme peut devenir enceinte dans l'état d'hystérie, de narcotisme, d'asphyxie, d'ivresse complète; par conséquent, sans le savoir, et sans partager la jouissance de l'homme qui la déshonore. Donc la fécondation et la grossesse ne sauraient être regardées comme incompatibles avec le viol, ni faire absoudre celui qui serait accusé de ce crime." *La Médecine Légale, relative à l'Art des Accouchemens*, p. 57.

epigenesis, or in the theory of Harvey, or that of Lewenhoeck. Under ordinary circumstances this may not be required, for then no object is to be gained by the convulsive effort by which an ovule is extricated, or by the erectile spasm of the fimbriæ, by which it is to be conveyed to the fallopian tubes, or by any of the other coincident phenomena. Now, any circumstance capable of producing such peculiar modifications of the female economy, could not occur, where the senses were not obliterated, without a knowledge of the fact, and pregnancy taking place, we cannot but believe that there must have been at the time some responsiveness of feeling between the parties,—sufficient indeed to conclude that there was not only physical but mental consent. Dr. Good observes, “that there is a possibility that there may be so high a tone of constitutional orgasm as to be beyond the control of the individual.”* This is, in truth, only a *possibility*; for if mere inappetency in married life can prevent the occurrence of this excitement, and thus afford an obstruction to fecundation, how much more should similar effects ensue, if terror, disgust, and the outraged feelings of delicacy were present. In drunkenness, asphyxia, narcotism, &c., every sense of virtue for the time is dormant, and every depressing passion being also absent, neither the mind,—for that is passive, not the body,—for that is beyond self-control, can offer any opposition to violence. How different is the reverse, when every feeling, sentiment, and passion, recoils with horror at the brutality. That must indeed be a high-toned constitutional orgasm, which could overcome the force of the most violent depressing passions. In restricting the question to the narrowest limits, there is, however, doubt enough connected with it to cause us to hesitate in giving a decided opinion before a court of justice. For our own part, we believe, first, that physical consent must be present at the moment of fecundation;—and again, that during a state of insensibility from narcotism, drunkenness, &c., there is no proof that the individual does not, in some measure, partake of the enjoyment of the person who dishonors her,—that it is more consistent with concurrent circumstances to believe, on the contrary, that she does, and that therefore pregnancy may *possibly* ensue, though the *will* be neither consenting nor opposing;—and lastly, that the circumstances must indeed be extraordinary, where pregnancy follows upon the exercise of violence; neither of the conditions of in-

* Study of Medicine, vol. V., p. 146.

sensibility alluded to, being present, and the female not consenting, either physically or by will.

The first condition is succeeded by pregnancy, properly so called. The features undergo a material change; this comprehends what may be denominated the anatomy of expression. Among those changes the neck swells, becoming softer, and the seat of congestion; which circumstance, according to M. Velpeau, was formerly pointed out by Democritus, and which has been happily introduced in some lines by Catullus.* The pulse at first is more frequent than usual, but afterwards acquires force and hardness, becomes fuller and bounding. About the period of labor, it assumes an intermitting and corded character; and finally, the artery becomes more tense, with an increase of frequency and velocity. From this condition of the sanguiferous system, it will at once be perceived why hamorrhages are more apt to occur from those parts, which are the peculiar seats of irritation. The appearance of the blood drawn from the vein will also be remembered. The buffy coat is generally present, and there is a larger proportion of lymph than when the female is in an unimpregnated state.

The temperature of the body is increased; insensible transpiration is more abundant, and has a distinct odor, which the observant accoucheur will have noticed. The urine flows more freely and deposits a sediment, and the skin generally exhibits peculiar stains, or ephelides, probably occasioned by the hepatic derangement, which is always accompanying pregnancy.

The occurrence of the varieties of gastric derangement, as anorexia, nausea, limosis, vomiting, &c., is so general, that we need say nothing to render the subject familiar to our readers.

A material change of the moral condition of the female is very frequently seen to take place. The gay and even tempered often become melancholy and petulant, and the sad and unsocial, on the contrary, become cheerful and communicative. Moderate passions acquire a violence, that sometimes leads to the commission of crimes; the honest become thieving; the witty are more acute or satirical, or become stupid and apathetic. The memory is affected, sometimes with more activity, at others, it is entirely the reverse; the intellectual tastes are refined, or, on the contrary, become disgustingly gross; the judgment is exquisite, and the imagination is so exalted in some wo-

* "Non, illam nutrix, oriente luce, revisens,
Hesterno collum, poterit circumdare filo."

men, that during pregnancy they have attained a surprising degree of perfection in works of genius, which had been previously cultivated with indifference, and without success. Finally, in one case the female may be excited to mania, while in another, she is never sane excepting during gestation.

The appearance or suspension of diseases in pregnancy, is another fact often noticed. Indeed the entire and effectual disappearance of some complaints, we have known to occur in several cases. While tooth-ache and facial neuralgia are frequent concomitants of pregnancy, many pulmonary, gastric and long continued menstrual derangements are suspended for the time, or do not again make their appearance. It must, however, be observed, that this suspension is often only repressing a disease that after parturition seems urged on to a more rapidly fatal termination.

The above is a summary of the more prominent sympathetic phenomena, that are evinced in the modified condition of women during pregnancy. They afford us a series of rational signs, that *conjointly* may lead to satisfactory conclusions, but the absence of any portion of them will deprive us of the ability of asserting positively as to the existence of pregnancy. Either of the symptoms may occur without pregnancy, or pregnancy may exist without giving rise to them; or they may be simulated to a certain degree for interested purposes, or be fancied to be present merely because they are desired.

Besides the foregoing, we have another rational sign,—the suspension of the menses. This is generally the first and most conclusive symptom. Here again, however, we meet with uncertainty, for the catamenia may be obstructed from a variety of causes. M. Velpeau observes, “that if this irregularity, happen suddenly without being preceded by any accident or disease, that might account for it, and in a woman who is commonly very regular, it may constitute an almost certain sign of pregnancy, while in the contrary condition, its value always much lessened, can be determined only by a circumspect and experienced practitioner.” It need not of course be remarked, that the absence of the menses cannot be of any value, when this discharge has never appeared. Again, the menses may have been suppressed for a long time, and yet pregnancy may take place. Some women too, are never regular except when pregnant, and others again, have no suspension of their accustomed regularity at any period. This last circumstance, M. Velpeau observes, is occasionally almost an epidemic, or at least much more frequent in some years, than in others.

The enlargement of the abdomen is commonly referred to, as

an indication of pregnancy, but cannot be depended upon, except as collateral evidence. The regular rate of increase, however, would give much value to the size as a rational sign, and should not be overlooked.

“The belly often tumefies or swells by insensible degrees, from the first week after conception has taken place; it afterwards diminishes, or is even flattened about the beginning of the second month; whence the common proverb, *à ventre plûs, enfant il y a*. It soon afterwards grows again in regular manner, and never stops until the term of parturition. At first it projects along the median line and lower part of the hypogastrium; while the navel seems to sink beneath its natural level. Until the fourth month, the iliac regions appear to grow hollow instead of projecting in proportion with the hypogastrium. About the end of the third month, the navel approaches towards the level of the skin, which it soon surpasses, so as in some women to form a protuberance of an inch or two, in the course of the fifth, sixth, or seventh month. Upon the whole, the special character of a pregnant woman's abdomen, is that it grows from below upwards, and remains a long time flattened on its sides, although its middle portion already projects considerably.”

None of the foregoing symptoms, however, are infallible,—they may be present, and yet pregnancy may not have taken place. We can only hope, therefore, to arrive at any thing like mathematical certainty, through the evidence afforded by the means which constitute the third division of M. Velpeau. This evidence is obtained from the *sensible signs* of pregnancy, by, 1st, the touch; 2d, ballottement; 3d, auscultation; and, 4th, by detecting the motions of the child.

1st. *The touch*.—This is to be practised by introducing one or two fingers in the vagina, while the other hand is applied in front of the abdomen. The left should be used with as much facility as the right hand; this can only be acquired by practice. By this mode of examination, however, no absolute conclusion can be drawn, until generally after two or three months from the commencement of gestation; after that period, it is the surest mode of exploration in our possession. In practising it, attention must be paid to certain circumstances which should modify the position of the woman. On this point, we shall give M. Velpeau's remarks. The touch, he observes,

“Not only serves to determine whether gestation exists, but it further indicates the degree, the kind; it alone can teach us whether labor is near at hand or begun, whether it is in an advanced stage, whether the child presents aright, whether the assistance of

it is useless or necessary, whether every thing is right after labor, &c. The touch then is the principal lever, or at least, one of the most powerful resources of tokologic science. But, in order to practise it with success, to avoid the gross mistakes that it may cause us to commit, to derive from it every possible advantage, it is necessary to practise it for a long time, inasmuch as practice alone can make us skilful in such an operation.

"When the woman is affected with ascites, hydrothorax, asthma, organic disease of the heart or great vessels, when her breathing is difficult, she should stand up during the operation of the touch, so as to avoid the fatigue and even danger that might be incurred by placing her in a horizontal posture. If, on the other hand, she is weak, threatened with syncope, hemorrhage, or convulsions; if the womb is strongly inclined forwards, or if from any other cause, the neck is thrown very far backwards, it is better for her to lie down. Finally, if any difficulty be experienced, she should be examined in both positions, alternately.

"The muscles must first be placed in a state of relaxation. If the woman is lying down, she should be told to bend her legs and thighs, as well as her head and breast, which are to be gently raised with pillows or bolsters. In the contrary case, she is to be placed against a wall, a piece of furniture, or any solid body for her support; she then separates and slightly bends her lower limbs, while she at the same time inclines her head and breast a little forwards. To prevent the awkwardness of such a posture, she may be permitted to rest her elbows or hands upon the arms of some other person, or simply upon the edge of a table, or on a couple of chairs placed expressly for that purpose on each side of her."

In touching, the bladder should be empty; and previously to examining the neck of the uterus, the state of the rectum, of the *bas-fond* of the bladder, and vagina, and the conformation of the straits, and cavity of the pelvis, should be carefully explored. This examination having been carefully made, we next proceed to our specific object, and notice the length and thickness of the lips, and the form and direction of the orifice of the *os tincæ*, the length of the neck, and the relative weight of the uterus; the last may be determined by raising the womb upon the finger, while the dimensions, as far as possible, can be ascertained at the same time, if, while the finger is in this situation, we can succeed in feeling and pressing upon the fundus through the abdominal parietes. To form a proper judgment of the case, the examination should be repeated, and the rate of obliteration of the cervix, its form at different periods, &c., should all be familiar to the accoucheur.

"Hippocrates and the ancient physiologists taught that the va-

ginal orifice of the womb closes immediately after fecundation, so as to prevent the escape of the semen. Mauriceau and other accoucheurs have remarked, further, that the cervix becomes sharper than it was in the course of the two months preceding fecundation ; that it assumes the form of a cone with its base turned upwards. These changes, it is true, take place in some women, but they so often fail in those who have never borne children, and are so fugacious, so difficult in common to recognise, so slightly marked after a first pregnancy, that it is almost impossible to derive any advantage from them.

"Stein affirms that in the first two months, the posterior lip, naturally the shortest, becomes the longest, and at length reaches the same level with the anterior one ; that the slit in the os tincæ is transformed into an opening more or less regularly rounded and circular ; that the pubic face of the lower segment of the womb gives birth to a soft, and more or less projecting tumor ; and that these changes most commonly suffice to prove that the woman is with child. But it is so common to meet with a circular form of the lower orifice of the womb in women who are not pregnant, and who have borne several children, and even in young virgins to see the posterior lip as long or even longer than the other, either absolutely or only in appearance, that the assertions of Stein do not really deserve a serious refutation.

"I cannot, however, refrain from mentioning a peculiarity which, perhaps, imposed itself upon him as that anterior projection, which is vaguely treated of in the French translation of his work. It has happened to me several times, and I have pointed it out to a number of my pupils, to find, in women who had been already touched by a good many persons, that the anterior lip was sensibly longer and softer than at the commencement of our practical sittings ; examining this lip with care, it was then easy to feel a real crepitation, and to find that it was swelled, and fungus-like ; but this was a state wholly foreign to gestation, and which was produced solely by the frequently repeated touchings to which we had subjected the woman. At other times, we feel above the vagina, immediately in front of the anterior lip, a softer, larger, more regular and less elastic tumor, which does not crepitate ; but this projection, which I have met with at every stage of pregnancy, evidently depends upon the bladder, the bas-fond of which presses the corresponding wall of the vagina more or less downwards. I should not dare to affirm, moreover, that it does not pretty frequently exist independently of the state of gestation.

"Thus, until the second or third month, the sensible signs, the touch itself cannot, any more than the rational signs, give us a mathematical certainty of the existence or non-existence of gestation. They sometimes permit us to establish a diagnosis that is more or less probable, but never certain ; so that during this period, the touch is in fact but a feeble resource, and women should not, without strong motives, be subjected to it.

“At a later period, although the practitioner cannot affirm positively that there is a foetus in the womb, he can at least be sure that the organ is considerably increased in size. Thenceforth all that is necessary, is to distinguish real gestation from the diseases that are sometimes confounded with it. Soon afterwards we are able to perform the *ballotement*, and to perceive the spontaneous movements of the child, which are the only phenomena that prove beyond question the existence of pregnancy.”

2d. *Ballotement*.—This consists in ascertaining the presence of pregnancy, by placing the index finger under the cervix, while the other hand is applied over the fundus of the uterus. While the womb is held in this position, it is suddenly pushed upwards with the finger; the fetus being the only solid substance within the amniotic fluid, and being also free and movable, is thrown upward by the percussion, and strikes directly opposite to the point that received the impulse, conveying a shock which may be sensibly felt by the hand placed over the fundus. If the shock be not felt here, it will at least be perceived by the finger in the vagina as the fetus falls back upon the cervix. It will, of course, be understood that the fetus must have attained a certain size. There is, however, some uncertainty connected with this, as with the other signs alluded to. The quantity of liquor amnii may be deficient, the walls of the uterus and the abdominal parietes may be too thick, and the operator may be deceived, from a want of perfect familiarity with the subject.

“Whenever a solid and movable body has struck one or both hands during the operation for *ballotement*, there can be no further doubt as to the woman's being pregnant; but care should be taken not to be imposed upon by the jar of a fluid, or any other kind of motion. It is only from the fourth to the sixth month that the *ballotement* presents a resource of any importance; for it is rarely that the jar of the foetus can be perceived before the end of the third; and in the next three months of gestation it is in general too easy to determine the state of the woman to make such a recourse needful.”

3d. *Auscultation*.—To M. Kergaradec is principally owing the introduction of this mode of ascertaining the presence of pregnancy. According to this physician, two distinct sounds may be heard in the womb of a pregnant woman, namely, the *bruit de souffle*, or *placental souffle*, which is quicker and shorter, though analogous to that of a feeble respiration, and

cording to Dr. Kennedy, frequently corresponds to the "bellows'-sound" of Laennec ; and the *sound of the heart*, which is similar to the ticking of a watch wrapped in cloths, and is dependant on the beating of the fetal heart.* M. Velpeau observes, that he has never met with the first, except after the fourth month. "It should be sought for between the anterior edge of the pelvis and the navel, and lower down in proportion as the pregnancy is less advanced." Some doubts seem to exist respecting the causes upon which the *souffle* depends. Kergaradec, it will be remembered by those of our readers who have seen his memoir, believed that it was produced by the passage of the blood from the womb to the vessels of the ovum. Dr. Kennedy, in the Dublin Hospital Reports, is inclined to the same conclusion, or in other words, that the *souffle* is to be attributed to the utero-placental circulation. M. Velpeau, however, does not think that the question is satisfactorily determined.

The sound of the heart might be confounded with the arterial pulsations in the parietes of the abdomen of the mother, were it not that while the latter beat only from sixty to seventy times in a minute, the pulsations of the former can be counted to the number of a hundred, a hundred and forty, or a hundred and fifty in a minute. Before the fourth month, this sound is scarcely appreciable. When the back of the fetus is placed anteriorly, the sound is much more distinct.

"In order to perform the auscultation, the woman must be lying down, although in fact she might be allowed to stand up ; if the pregnancy be somewhat advanced, the ear will suffice, and sometimes succeeds better than the stethoscope, with persons not in the habit of using that instrument. However, it can only be conveniently applied on the anterior half of the abdomen. Moreover, the friction of the gown, or any other part of the woman's dress, whom it is unnecessary to uncover during the operation, may frequently deceive us as to the nature of the sounds we hear. The stethoscope in general yields a clearer or more intense sound ; besides, it can be applied at all stages of pregnancy, and to all the points to which the fœtus seems able to turn its back : the end piece is to be taken off ; then after having felt for the womb, it is placed first on the left, then on the right, and next on the middle of the

* For some extended observations on this subject, from the Dublin Hospital Reports, see the 2d No. of this Journal, p. 488.

hypogastrium; it is even applied to the loins, the posterior face of the sacrum, the crista of the ilia, the front of the pubis, &c.

"Were it always possible, the child's back, the corresponding parietes of the womb and abdomen, the stethoscope, and the ear of the accoucheur, should not be separated by any void space, and by no other part, and they should constitute, as it were, a continuous body, without any interruption whatever.

"The sound of the heart is a certain sign both of pregnancy and of the child's being alive; its strength, in general, indicates the vigor and good health of the child; during labor, when accidents occur, or when a serious operation appears to be indispensable, its simultaneous existence at two opposite sides of the abdomen will render it certain that the womb contains two children; if met with in a woman whose uterus is but little developed, no doubt remains of there being an *extra-uterine* pregnancy; but its absence, like that of the active or passive motions of the fœtus, does not afford a conclusive proof that there is no gestation, or that the child is not living."

4th. *The movements of the child.*—This is the most conclusive of all the sensible signs; when distinctly felt, doubt can no longer be entertained. If the movements are weak, and return but rarely, some means should be taken to make them more satisfactory. Wetting the hand with cold water, and applying it to the naked abdomen of the woman, will generally suffice. We should be careful not to confound other sensations with the motions of the child. It is possible, that unless a cautious procedure is pursued, the movements of the bowels, spasmodic action of the muscles, and other circumstances, independent of pregnancy, may lead to mistakes.

Having ascertained the presence of pregnancy by discriminating and satisfactory deductions, drawn from the several evidences we have detailed, it will also be a matter of some moment in medico-legal inquiry, to *determine the stage of gestation*. We shall, therefore, conclude our notice of this part of the subject, by giving M. Velpeau's observations on this useful point.

"After having, by means of the simple touch, of *ballotement*, of muscular movements, or of auscultation, ascertained that there is pregnancy, it is still further useful, sometimes, to determine its stage. On this subject I shall not repeat what has already been said concerning the changes effected every month in the state of the cervix, the body and fundus of the womb; I shall content myself with remarking that, in order to obtain a just idea of these changes, especially those of the neck, it is often needful to *touch* in a different manner from that in which it is commonly done. In the

first place, we are not to understand by the *neck* that portion merely of the womb that projects into the vagina, but rather all the cylindrical portion of the summit of the uterine ovoid, a kind of appendix which cannot be completely felt, except by pushing back the vaginal cul-de-sac with the finger, in the centre of which is felt the os tincæ; in the second place, in women who have had children, we should make an allowance for the thickness of its lips; lastly, when the uterus is oblique in front, and the pelvis not very large, the orifice may be so high up, that in order to reach it, the radial side of the finger must be turned backwards, or the perineum somewhat depressed, while with the other hand applied upon the epigastrium, the fundus of the womb is thrust backwards towards the vertebral column. In other cases, particularly where the superior strait is very ample, the neck looks directly towards the anterior surface of the sacrum; to touch here, we are obliged to carry the finger almost horizontally backwards, and then to bend it forwards in the shape of a hook; in other women we meet, in the superior half of the excavation, a rounded tumor, in the posterior part of which the neck appears to be obliquely hollowed out, like the ureters in the parietes of the bladder; with all these precautions, a skilful accoucheur can say what is, within from fifteen to thirty days, the period of pregnancy; but it would be dangerous to forget, that there are numberless causes of error, and that we should never, before a court, give a decisive opinion until we have previously acquired a mathematical certainty of the fact concerning which we have to pronounce."

Extra-uterine pregnancy is generally divided by authors into ovarian, abdominal, tubal, and interstitial. Although retaining this classification, M. Velpeau is inclined to doubt whether, strictly speaking, there is a possibility of ovarian gestation.

"I have learned at my own expense how easy it is to be imposed upon in this matter. In 1824 and 1825, I met with the remains of extra-uterine conceptions in four different subjects; I removed the sexual parts with great care, and thought I was in possession of four facts in proof of the existence of ovarian gestation. I presented them to the *Société Philomathique*, where several members expressed doubts as to the possibility of the fact. MM. Blainville and Serres were good enough to assist at the dissection, which I performed the next day. We satisfied ourselves that three of these tumors were outside of the germiferous gland; we experienced greater difficulty in regard to the fourth, which did not exceed an inch in size; but at length, after having completely isolated the Fallopian tube, we found that the detritus of the conception was contained in a special sac between the peritoneal coat and the proper covering of the ovary, which was wholly distinct from it. Certainly, none of the facts that have been cited as proofs of the

existence of ovarian pregnancy, have been more carefully examined ; and certes, if it had not been for the objections and the presence of an able defender of the opposite opinion, we should have remained convinced that the seat of the tumor was in the very parenchyma of the ovary."

We conclude this part of the work, without making any observations on the other varieties, and shall pass at once to the author's chapter on *false pregnancy*. Although conversant with those signs of pregnancy which we have already enumerated, and which will enable us, in a majority of cases, to determine upon the presence of a fetus in the womb, still our diagnosis will scarcely be complete, without at the same time being able to distinguish those symptoms, arising from various diseases, that may so well counterfeit the phenomena of true gestation, as to lead to error. This has occurred to men eminent in the profession, and should teach the importance of careful discrimination. It is useless, observes M. Velpeau, to invoke the rules of art against these errors, for there are cases so obscure that the most skilful practitioner may really mistake their true nature. According to Orfila, Professor Dubois confessed that even he had been deceived by that, which would seem the least likely to mislead any one at all familiar with the subject, we mean, the apparent motions of the fetus. Beck enumerates several instances of mistakes that have been made with respect to dropsy, the suppression of the menstrual discharges, &c. ; and almost every writer on midwifery or legal medicine, is able to add cases to the list. "I was called in consultation to a lady," says M. Velpeau, "in order to decide whether it was necessary to perform the cesarean operation ; the patient was affected with *peritonitis*, of which she recovered, and *schirrous ovaria*, of which she died." As we cannot well abridge what the author has so concisely said on the diseases which constitute what is called false pregnancy, we shall give the following, for the information of such of our readers as may not be sufficiently familiar with the subject.

"The accumulation of blood, serum, or gas, in the womb, might indeed impose upon us in this matter. On this subject we may refer to the memoir lately published by Madame Boivin. But if the womb is filled with *blood*, or if the person has always had difficult menstruation, the touch shows that the hymen is imperforate, that the vagina or some other part of the genital organs are not properly formed ; if it be a married woman, or one whose menses had been previously regular, there will, in general, be found at the

same time more or less numerous indications of disease, which clear up the diagnosis; besides, the motions of the fetus are never met with in those cases.

"In the case of *hydrometra*, we are in possession of the same resources, and the local affection is accompanied with so serious a change in the general health, that with a little reflection, error becomes from that very circumstance, almost impossible.

"In *uterine tympanitis*, the womb may acquire a considerable size, but it always remains very light, there is no *ballotement*, and percussion of the belly occasions such a resonance as at once dissipates all uncertainty.

"*Encysted dropsy*, fibrous or scirrhus tumors, any unnatural growth in the ovary or parts connected with the womb, might, at most, be confounded with extra-uterine pregnancy, inasmuch as the neck in those cases undergoes only very slight changes; the want, also, of the positive signs of the presence of a child, the general state and progress of the affections, will always suffice to prevent us from asserting that there is one, and frequently to lead us to maintain that there is no gestation in the case.

"As to *ascites*, peritoneal tympanitis, effusions of pus or blood in the abdomen, encephaloid, fibrous, scrofulous, steatomatous, or any other kind of tumors, and the various lesions of organs contained in the belly, they are so many diseases, or symptoms of diseases, which only resemble pregnancy in the distention of the abdomen they occasion, and a few other still more inconclusive signs. If the peritoneum is distended with gas, percussion will show it at once to be so; in ascites, the fluid, falling to the lowest places, according to the laws of gravity, will give to the belly a form too readily distinguishable from that of pregnancy, for those two states to be confounded, and the difference is still greater in all the other affections that I have just now mentioned.

"The group of symptoms, known as *nervous or hysterical pregnancy*, have most frequently been the cause of error on this head. It is most frequently met with about the period of cessation of the catamenia, or in unmarried women of an irritable or nervous habit, in such as, having lost their first children, are much tormented with a desire of having more, those who have remained several years in a state of widowhood, and think they have been fecundated by a second husband. The menses are suppressed, nausea, qualms, changes in the breasts, in the digestion, and sometimes all the rational signs of pregnancy supervene, and now and then the woman goes so far as to affirm that she feels the motions of the child quite strong; and what is more, there have been skilful accoucheurs who have partaken of the error."

In reference to "hysterical pregnancy," M. Velpeau relates a case which shows not only how deceptive appearances may be, but also how important and generally conclusive is the exa-

mination of the parts in all doubtful instances. A somewhat similar case came within our knowledge not long since, where an able practitioner and experienced nurse were deceived by the accuracy with which the ordinary symptoms were recited. This lady in due time after marriage fancied herself to be in the condition she most desired to be, but month after month disappeared, until the term was more than accomplished, when first suspicion, and then absolute certainty of the absence of impregnation, resolved the question. In fact, she had only been pregnant with Thomas's Chapter on Pregnancy, from which she had learned the symptoms she *ought* to have had, and which her imagination caused her to believe she really experienced.

Molar pregnancy and hydatid pregnancy give rise to the same symptoms as true gestation, and hence their diagnosis cannot be made with certainty. As they end in abortion, and as no conclusion can be made before the third or fourth month of pregnancy, any error will be thus very soon discovered.

The fourth chapter brings us to the consideration of the human ovum—the fetus and its appendages. In respect to the formation of the first or outer membrane, there is much difference of opinion among authors. The doctrine of W. Hunter, we believe, is that which is the most prevalent at the present day, but still there is much diversity of belief, as to the number of layers of the membrane, and the manner in which the ovum, in passing into the uterus, depresses the *caduca*, or penetrates through it. Thus Hunter, and we believe Scarpa, who maintained that it was coagulated or inspissated lymph, have given to the *caduca* but two layers, which in reality are one, the second, or what is termed the inner one, being merely a reflected extension of the primary membrane. Burns, on the contrary, who makes two original layers, one highly vascular, the other fibrous or gelatinous, necessarily makes three layers at the least, according to his description, though in truth there would be four, did he not provide openings in the external vascular coat, for the entrance of the ovum into the uterus. Dr. Dewees has justly contested this description, but still from the obscurity with which he has expressed himself, we do not know how he is to get rid of the double membrane of Hunter, (*decidua vera* and *reflexa* we only mean,) without at the same time, he grant so much of the subject of his criticism, as allows an escape of the ovum *through* the original *caduca*. If Dr. Dewees only intends to say, that the *caduca* is a single continuous membrane, presenting the appearance of a double one, from inversion upon itself, then as we understand the subject, there is not much diffe-

rence of opinion between Hunter and himself; Burns' history of this connecting membrane is very unsatisfactory, while Hamilton understood, we think, but little of the truth of the matter, for he made the reflexa a complete membrane, like the amnios and chorion.

M. Velpeau adopts the doctrine of W. Hunter, making the *caduca* an exudation of coagulable matter, which soon transforms itself into a kind of sac, which at no time contains a vestige of organic structure. This last assertion is at variance with the opinion of most other writers, who say, that injections actually show the presence of blood vessels. From a superficial examination, the appearance of bloody striæ, or reddish stellæ, or spots, may induce a belief of this kind; the pellicle which lines the inner surface, may be mistaken for cellular tissue, and the interlaced fibres which may be frequently seen, may strengthen an opinion in favor of the organization of the *caduca*; but all these, M. Velpeau observes, no more indicate the presence of vessels, than do the membrani-form concretions, which are thrown off in croup, &c. Again, if it were organic, might we not expect to find sometimes an intimate adhesion of the membrane to the surface of the womb, or to the chorion? There is, too, no difference between the *caduca* at the commencement, and at the full term of pregnancy; and no one, also observes the author, has pretended to have seen a trace of organization at the former period. So far as the pretension goes, we must correct M. Velpeau. Mr. Burns says, that very "speedily after impregnation,"—"if the vessels have been injected, this (dense coat or *caduca*) evidently is seen to consist of two different substances, namely, vessels and a firm, tough gelatine. It seldom happens, that all the vessels, can be equally filled, and therefore, some spots are redder than others. The vessels do not pass on the surface of this coat, but are seen shining through it. They proceed directly from the surface of the womb, and project at right angles, to the plane which yields them," &c.

Notwithstanding all the difference of opinion, as to the formation of the reflexa, we think there really cannot be much difficulty, in conceiving how the *caduca* may be understood to be in some measure a double membrane. It is simply a duplication within itself, like a double night cap; the ovum lying next the original external surface of the membrane, which has become what is called the inner layer of the *caduca vera*. There is only one difficulty to a ready comprehension of this explanation, and that is in connexion with the placenta. If as some

describe it, the *caduca* intervenes between the placenta and uterus, it is not so easy to understand how it came in that position, believing at the same time, that the ovum lies within this simple duplicature, for then the placenta must be entirely within the continuous sac, the umbilical cord at the same time making a passage through the reflexa. M. Velpeau's description makes the thing very simple, and suited to the comprehension of all; for the lamella lying between the uterus and placenta, he does not consider as the *caduca*, but a *membranule*. We subjoin the author's remarks.

"The ovule, after having passed through the tube, necessarily depresses the caducous membrane, so that it may glide on betwixt it and the uterus, to the internal surface of which it at last attaches itself; from this moment the pre-existing membrane is composed of two portions; one, very large, lining the whole interior of the womb, except the part which is in contact with the germ, bears the name of *uterine* or *external caduca*; the other, very small, depressed by the lower half of the fecundated vesicle, which it envelopes, constitutes the *reflected caduca*, *internal caduca*, or *epichorion*. The extent of the former augments in the same ratio with that of the womb, and the aggrandizement of the latter necessarily follows the growth of the germ. Therefore the cavity which separates them, and which is nothing more than the altered cavity of the primitive sac, is the greater, the nearer we are to the first periods of gestation.

"The uterine *caduca* preserves a pretty considerable thickness, especially in the vicinity of the placenta, until the close of pregnancy; the *epichorion*, on the contrary, grows insensibly thinner, so that at the period of labor it is sometimes of an extreme tenuity.

"One, by sinking down into the other, at length comes to be in contact with it, a little sooner or later, about the fourth month, for example; after this, the two layers remain in a state of more or less perfect contiguity until the expulsion of the after-birth, without, however, being even confounded together, notwithstanding the assertions of Hunter, and all others who have treated of this subject since his day. It is evident, then, that this membrane is managed in regard to the ovule, as the pleura is in relation to the lung, or as the serous membrane of the pericardium is in respect to the heart."

"It is sufficient to cast a glance on the porous surface of any placenta, to be convinced that one of its halves has not remained adherent to the uterus; to remark that this surface is smooth, and covered with a thin lamella, noticed even by those who admit the double layer, in order to see that the fact is not so, and indeed cannot be so, &c.

"This *membranule*, which covers the fungous surface of the pla-

centa, admitted by Arantius, Littre, Hunter, MM. Lobstein, Chaussier, Meckel, and most of the modern anatomists; rejected by Ruysch, Mery, Rouhalt, &c. seems to me to have been generally ill understood: some, contrary to the opinions of Wrisberg, have thought it to be only a thin portion of the caduca; according to most observers, it contains many vessels; many authors state that it passes directly from one lobe of the placenta to another, without dipping down into the interval between them; a still greater number, on the contrary, pretend that it dips down, also, between the cotyledons, between each bundle, and every vascular filament, to which it furnishes a kind of sheath. Lastly, there are some who believe in its existence during the whole period of pregnancy; while others say they have only met with it in the three or four last months.

"As long as the placenta does not form a compact mass, that is, until about the twelfth week, there is not a trace of the pellicle in question; as soon as the tomentose groups of the chorion become entirely agglomerated, it appears, as if to cover their summits, and soon afterwards is found to be continuous and confounded with the reflected edge of the anhistous membrane.

"It certainly contains no vessels, and the idea of a circular venous sinus, which according to the reports of certain anatomists exists along the circumference of the placenta, can only be the result of a careless observation.

"The utero-placental pellicle is here disposed in the same manner as the arachnoid is on the brain: on the top of the projections and protuberances it adheres intimately; whilst opposite to the spaces, betwixt the lobes it may be easily separated, in the shape of a delicate, transparent lamella; like the arachnoid, it also remains on the surface, and in general does not penetrate into the parenchyma. Its nature is similar to that of the pellicles, which soon after their formation cover almost all sorts of fibrinous concretions. It is not a tissue; it is destroyed by placing it in water, and after a few hours dissolves as readily as all the other membraniform concretions.

"A coat of *deposite*, much thicker, more fragile, and not so smooth as the preceding one, surrounds all the vascular trunks; that is what has given occasion to the belief, that the vessels of the placenta ramify in the very substance of the caduca; that the chorion is composed of several coats; that the anhistous membrane lends one lamina to the external and another to the internal surface of the placenta, and that the delicate pellicle of the latter is doubled down between all the fibrillæ of its lobes and lobules. The lamellæ of which it is composed, appear to me to be a concreted product of a peculiar exudation from the womb, the chorion, and its tomentose portion. In this respect, there is some analogy between them and the caduca; but they differ from it in this, that they are not to be seen until a long time after the ovum has reached the uterus, while the anhistous sac forms immediately after fecun-

duction; and also in this, that one is very soft and somewhat elastic, while the others are dry, hard, and break almost as easily as glass."

Passing over much interesting physiology connected with the remaining appendages, and the development of the fetus itself, which our space does not allow us to notice particularly, we come next to make a few remarks on superfetation. The doctrine of the "vivification of a germ in a woman, who already contains a fecundated ovule in some part of her generative organs," has alternately been supported and rejected. Instances are occasionally arising, which are supposed to give much strength to the belief; but the principal arguments relied on, are those drawn from the cases of the older authors, as well as those of a later period. Every one is familiar with the Charleston case of Buffon, that of Mosely at Jamaica, Dr. Stearn's case, the one of Desgranges in Foderé, and a few others. The credibility of these several histories cannot be doubted, but the difficulties in the way of a belief of the *possibility* of superfetation, as the term is generally understood, would seem to indicate that the peculiarities of the cases have been either hastily observed, or erroneously concluded upon. M. Velpeau thinks, very justly, that they are all referable, 1st, to twin pregnancies, in which one of the children, having died long before the full term, has been preserved within the membranes, not to be expelled until the other, which continued to live; 2d, to pregnancies of twins unequally developed, or born at different periods; 3d, to cases of extra-uterine pregnancy, which did not interfere with natural gestation; 4th, lastly, to cases of double uterus.

To the first may be referred the majority of alleged instances of superfetation. We have now before us a fetus delivered a few weeks since under such circumstances. It has the appearance of having died about the fourth month. It is much flattened, in a perfect state of preservation, and has fatty concretions, or incipient adepocire, wherever the evenness of the surface is interrupted by a fold. The mother gave birth in immediate succession, first to this, and then to a large, healthy living child. There was a single circumstance, however, that would have set to rest all suspicions of its being a case of superfetation; there was but one placenta, which was shrivelled at one slightly elongated extremity, where was attached the remains of a shrunken, gelatinous cord, broken during the expulsion of the living child. The dead mass still holds the other portion.

To the second and third classes, may be referred the case related by Dr. Stearns, in which a negro woman was delivered of a black child at the eight month, and a few hours afterwards of a mulatto fetus of about four months, both exhibiting signs of life. This at first sight, would appear startling to any thing like skepticism to the doctrine. But might not the apparent ages have been deceptive? Children of different colors may be born at the same time, of the same mother, where she has had commerce with a white man and a black one, during the same day. This was confessed by the woman at Charleston to have been the case with her. In the former case, therefore, we would account for the phenomena, by the unequal development of the embryos, together with the probable deception as to the apparent ages of each.

“Granting all possible authenticity to these observations, and supposing their correctness to be demonstrated, the ideas of physiologists that prevail at the present day, admit of their easy explanation. Two ovules may become impregnated, one after the other, in a woman who grants her favors to two or more men on the same day, or in the space of two or three days, that is to say, up to the moment when the excitement of the first fruitful coition occasions the effusion of that coagulable lymph in the cavity of the womb, which afterwards becomes the *membrana caduca*.

“Of two germs vivified by the same copulation, one may not descend into the uterine cavity until a considerable time after the other; the maturity of the two ovules may not have arrived at the same degree of perfection at the instant of their union with the principle furnished by the male; one of the germs may happen to be disengaged with difficulty from the ovary, remain adhering to it without growing with the same rapidity as its congener, and not escape from the vesicle, nor pass into the tube until after a greater or less lapse of time.

“I am astonished that modern physiologists, and even some medico-jurists, among whom should be mentioned M. Orfila, have admitted the existence of superfœtation up to the moment when the ovule reaches the womb, while they deny the possibility of its occurring after that period. It ought to be equally rejected in both cases. The conerescible lymph or anhistous membrane, is fully as capable as the ovum itself of intercepting all contact between the seminal principle of the male and that of the female. To conclude, superfœtation may take place; 1, In the case of extra-uterine pregnancy; 2, In that of a double uterus; 3, Where a woman has had commerce with two different men on the same day, or even at short intervals with the same man; 4. and lastly, While the uterine cavity is not filled with any substance, and the orifices of the tubes remain perforate.”

In legal medicine, a question connected with the foregoing may arise, where each fetus is *viable*, but of unequal development. If the conceptions have taken place at intervals, the products of which both live; one may be premature, or the other retarded, and an argument of legitimacy might hence arise, which would render a decision somewhat difficult, unless, as stated by Beck, it be referred to the law on premature and protracted births.

We have spoken of the viability of the fetus. This also is a question of moment in jurisprudence. The English law, from which, according to the author just named, our own statutes are borrowed, gives a right of property to the husband, when the wife is seized of an inheritance, and has issue *born alive*. The wife dying, the husband holds for life the lands which would have passed to the child had it lived, and been capable of inheriting the estate. It thus becomes a matter of some importance to determine, at what stage of pregnancy viability is possible? The French code has determined, that a child born before the one hundred and eightieth day after marriage, may if it is pronounced viable, be disowned by the husband. So far as a legislative enactment is decisive, this measure declares viability to commence with the seventh month; this decision, says M. Velpeau, is extremely wise in civil law, and could not be more just. This is no proof, however, that physiologically the child is never viable until at this period. Many cases may be referred to from different authors, for examples of infants born at four months and four months and a half, who have lived to an adult age. It should be borne in mind, however, in judging of these cases, that women often miscalculate, and that circumstances may occur, where stubborn assertion is used to cover frailty. That the viability of an infant at five months, at least is not impossible, we give the following from our author.

“A young woman miscarried at the Hospital de Perfectionnement; having been delivered of a child at term five months and twelve days before, in the same hospital, it was impossible for her to be more than five months pregnant. The fetus she brought forth weighed only one pound and a quarter; its skin was of a bright rose colour, and had on it no down nor sebaceous matter; its length from the vertex to the sole of the foot was only nine inches. Notwithstanding this, my attention and that of the pupils, was attracted to it by some stretchings and slight movements of its limbs; we wrapped the delicate creature in cotton, and placed it near its mother, who was told to pour a few drops of milk into its mouth from time to time; but as she thought such an abortion could not live,

she did not judge it proper to do any thing to prevent it from dying. It expired in fact the next morning, twenty-eight hours after it was born.

"My object is not by any means to maintain that these fetuses were *viable*; I merely wish to show that it is not strictly correct to say in a positive manner, that a child born previously to the last three months of pregnancy must be reputed not *viable*."

What constitutes the evidence of viability of an infant in law? "*Crying* is the strongest evidence of its being born alive; but it is not the *only* evidence."* "If it be born alive, it is sufficient, though it be not heard to cry, for peradventure it may be born dumb. It must be proved that the issue was alive; for *mortuus exitus, non est exitus*; so as the crying is but a proof that the child was born alive, and so is motion, stirring, and the like."† This definition, however good in law, will not suffice in a physiological point of view. As physicians, we prefer what we think the more accurate definition of the term given by M. Velpeau.

"A fetus is *viable* when sufficiently developed to move its limbs, and when it really does move them; when it cries and breathes freely; when its head is covered, or begins to be covered with hair; when its skin is no longer transparent, is covered with down, and coated with sebaceous matter; when the bones of the cranium touch along the greater part of their edges, and the sutures and fontanels are consequently very much closed; when it passes off its meconium and urine; when the proportions and dimensions of the different parts of its body are not too far removed from what is observed in fetuses at term: and not because it is exactly seven months old or more. For the same reason it ought not to be declared not *viable*, because it is born before the three last months of gestation, but rather because the absence of its cry, a respiration scarcely discernible, very feeble motions, inability to take hold of the nipple or finger, to void its meconium and urine, softness and separation of the bones of the head, the absence or fewness of hairs, the transparency and red colour of its skin, the want of a sebaceous deposit, the thinness of its nails, &c., prove that its organs are still far from the degree of perfection necessary for the maintenance of its exterior life."

Another point in legal medicine is the term of gestation, connected with which is the subject of retarded and precocious births. The ordinary term of pregnancy in the human species is nine months, or two hundred and seventy days. We say ordinary, for the laws of nature governing the phenomena of

* Blackstone; In Beck's Medical Jurisprudence, vol. 1. p. 175.

† Coke;—Idem.

re-production, are not immutable in this respect, and hence it is, that the civil law in England, France, and the United States, prolong this term to a period satisfactorily proved to occasionally occur. The French code determines that legitimacy may be contested when the birth occurs after the tenth month ;—in Scotland, a child born within ten months after the death of the husband, is legitimate ;—the English statutes, and those of this country, consider all children legitimate, who are born in lawful matrimony, or within about forty weeks after the death of the husband. We need not go over the many cases so often repeated, to prove the justness of the foregoing, as legal decisions. The subject has been learnedly treated of in this country, by Dewees, in favor of the doctrine, and less profoundly discussed in opposition by Beck. It certainly discovers a lack of knowledge in the latter author, or a deficiency of his accustomed candor, when he asserts, that cases of protracted gestation are rarely heard of in America, and that their occurrence is chiefly met with in countries of arbitrary laws, implying thereby that the laws alone make the cases. It is true, that the question has not been agitated here as frequently as in Europe, and therefore, the observation of medical men has not been so particularly directed to the subject. Every *practical* physician, however, will be able to point out one or more cases where, if legal proof cannot be adduced, there are at least satisfactory reasons for belief in the protraction of gestation beyond the term of two hundred and seventy days. Very few, we think, disbelieve this, and but as few may be willing to give any importance to a sarcasm that would place the arguments in favor of the doctrine, on equivalent terms with those adduced in support of conception occurring by the force of the imagination alone. As far as social order is concerned, it may be well,—indeed it is imperative, that a too hasty decision on this subject should not be made ;—but there are so many proofs substantiated by accurate observation, that go to the establishment of the doctrine, that, at the present day, it really appears idle seriously to contest it. If the object of investigation is truth, the social conventions might, in some measure, control our deliberations, but they should not repress our just conclusions. It is bigotry to contend for an opposite opinion in matters of science.

If the mutability of term may derive any advantage by an analogy to what occurs in brutes, then the following will strengthen the doctrine of protracted births.

“ The antagonists of Petit relied chiefly on the circumstance

that, according to Aristotle, "the period of gestation in animals is limited to a fixed space, and the term at which they bring forth, is not subject to any variation." But, as Buffon had before pointed out, this assertion is wholly false; Milot speaks of a cow, which brought forth its calf five days after the term, and of a cat that kitted nine days before the regular period. Besides, M. Tessier, member of the Academy of Sciences, a man whose honor and good faith cannot be called in question, has removed all doubt upon this subject.

"He found that, of one hundred and sixty cows, which commonly carry their young nine months, as women do, only three brought forth on the two hundred and seventieth day; that fifty of them went from the two hundred and seventieth to the two hundred and eightieth; sixty-eight from the two hundred and eightieth to the two hundred and ninetieth; twenty to the three hundredth; and that five of them did not calve until the three hundred and eighth day, which is thirty-eight days beyond the term. On the other hand, fourteen of them calved from the two hundred and forty-first to the two hundred and sixty-sixth; so that we find sixty-seven days betwixt the two extremes.

"Of one hundred and two mares, whose term is eleven months, three of them foaled on the three hundred and eleventh day; five from the three hundred and tenth to the three hundred and thirtieth; forty-seven from the three hundred and fortieth to the three hundred and fiftieth; twenty-five from the three hundred and fiftieth to the three hundredth and sixtieth; twenty-one from the three hundred and sixtieth to the three hundred and seventieth; and one on the three hundred and ninety-fourth day, which gives a latitude of eighty-three days."

If the term, then, is so far from being immutable in brutes, is not the evidence strongly in favor not only of the possibility, but of the liability of women to be governed by the circumstances, whatever they may be, that are productive of this irregularity, especially when we consider how much more obnoxious they are to physical impressions than the inferior species of animals? But leaving this argument, we find other and sufficient evidence for the conviction of every ingenuous mind. In the celebrated case before the House of Commons in 1825 and 1826, Dr. Blundell mentioned one pregnancy of *two hundred and eighty-seven* days; and Dr. Merriman had seen several of *two hundred and eighty-five*, and *two hundred and eighty-seven* days; two or three of *two hundred and ninety-six*, one of *three hundred and three*, and one of *three hundred and nine* days. Burns says, that certain causes which we cannot explain nor discover, are capable of protracting the labor beyond the ninth month; and Capuron, after relating many au-

thenticated cases, observes, that the imposing mass of facts and proofs irrefragably demonstrate the validity of the doctrine of tardy births. Dewees states his conversion from scepticism on the subject, to have been caused by a case where there could be no doubt;—the woman was delivered on the *two hundred and ninety-third* day, of utero-gestation. Another case occurred to his knowledge, where, without a possibility of suspicion, the lady was confined ten months after the departure of her husband for Europe. The case related in the *New-England Journal*, where labor pains commenced at the period of the usual termination of gestation, but were unavailing, and where, without their removal, or her delivery, the catamenia regularly returned, proves that the uterus may remain quiescent for a period beyond the ordinary term, and also that dead children are not always born at a fixed term of pregnancy. That they are, is often brought as an argument in opposition to the doctrine. The case related by Foderé of his own wife, is an incontestable argument, also, in favor of a protraction of the term, even after the pains had appeared at the usual epoch for delivery. It was forty days afterwards before the pains were renewed, and the lady gave birth to a child. To the foregoing, we add the following from Velpeau; the first is related by Desormeaux; the second fell within his own practice.

“A lady, the mother of three children, was seized with insanity in consequence of a severe fever, and all the resources of hygiene and therapeutics had been exhausted upon her case in vain; a physician thought that a new pregnancy might, perhaps, restore her intellectual faculties. The husband consented to note down in a register the day of each sexual union, which took place only once every three months, so as not to interfere with any still imperfect conception. Now, this lady, who was watched by her servants, and who was moreover endowed with very severe principles both of morality and religion, was not confined until the lapse of nine months and a half.

“A woman in her fourth pregnancy computed that she was four months gone when she came to my amphitheatre. I distinctly felt both the active and passive motions of the fetus. Appearances of labor took place at the end of the ninth month, were soon suspended, did not return for thirty days, languished a whole week, so that in fact the delivery did not take place until the three hundred and tenth day.”

The doctrine of protracted gestation would, therefore, seem to rest upon incontestable arguments, but we are still unable to fix any limits to the extension of the term. On this point our

information is insufficient, and we must remain as undecided in respect to the reverse, or at what period *within* the usual term a birth may be considered precocious. The opinion is not rare, in fixing it as early as after one hundred and eighty days from the presumed moment of conception, that is, within the seventh month. Hence it is, that a child born as early as this period after marriage, or after the return of a husband who has been absent, has been considered in some countries as legitimate. It is undoubtedly the fact, that causes may operate to produce a hasty development of the fetus, and that thus some women never carry the child beyond the eighth, and others have been known always to have given birth within the seventh month,—the children at the same time presenting all the appearance of having arrived to maturity. From a variety of circumstances, the question is not so easily decided as the previous one of protracted births. Analogy goes far in proof of it, and we are not aware that any thing can be reasonably urged against the possibility of it.

“Every body knows that one fetus is sometimes better grown and stronger at six months, than another at seven or more; that a child at term is sometimes not so stout nor tall as another which is only of seven or eight months gestation; that on this point the development of the ovum exhibits varieties that are almost infinite; that the changes that take place in the organization of the womb, from the period of fecundation onwards, tend to develop in it a force similar to that which directs the action of the muscles; that, except in case of accidents, parturition is not effected until this force attains such a degree as that the uterus may contract with the utmost force of which it is susceptible; which necessarily takes place sooner or later, according to an infinitude of circumstances; all these things are known, I say, and shall any one dare to maintain that precocious births are impossible!”

The subject of labor commences with chapter V. What is labor? M. Velpeau objects to many of the definitions given to the term, as being incorrect, not complete, or inconvenient; he prefers simply to say, “*that labor is a function that consists in the expulsion of the ovum from the mother's organs.*” The classification is simple. The truth is, that the minute arrangement so often observed, is more apt to confuse than guide the student, for nothing destroys simplicity so much as a labored attempt to give to a subject the *appearance* of complication, which is often done by this nice division into a variety of classes, distinct, it is true, in name, but which, for all useful purposes,

might better be combined. We, therefore, like M. Velpeau's classifications into simply *eutocia* and *dystocia*.

"The division that I prefer, approaches very nearly to the one indicated by Mauriceau. All labors that terminate under the sole influence of the powers of the organism, after the manner of M. Lebreton, I call *spontaneous*, fortunate or simple ; those, on the contrary, that present difficulties of what nature soever, and which in any way endanger the life or the health of the mother or of the child, I call *difficult*, troublesome, or complicated ; and each of these great classes may in turn be divided into orders, genera, species and varieties, if the wants of the science call for it.

2 Classes.	1. Eutocia.	$\left\{ \begin{array}{l} 1. \text{ The vertex.} \\ 2. \text{ The face.} \\ 3. \text{ The pelvis.} \end{array} \right\}$	All labors that terminate spontaneously.
	2. Dystocia.	$\left\{ \begin{array}{l} 1. \text{ Hemorrhagic.} \\ 2. \text{ Convulsive.} \\ 3. \text{ Aneurismal.} \\ 4. \text{ Hernial.} \\ 5. \text{ With procidentia.} \\ 6. \text{ From disease of the woman.} \\ 7. \text{ From narrowness of the pelvis.} \\ 8. \text{ From wrong positions.} \\ 9. \text{ From exhaustion, \&c.} \end{array} \right\}$	

M. Velpeau's division of labor proper is into two stages, which is similar to that of Burns and Denman, with the exception that the two former make the delivery of the secundines an accessory or second labor, while the latter considers it as a third stage. Our author, however, adopts as an independent period, the secret stage of Millot, which is equivalent to the precursory signs of Boivin. There is then a precursory stage, comprising the different symptoms manifesting themselves for the four or five days immediately antecedent to the term of gestation ; a first stage, properly so called, which terminates when the dilatation of the os uteri is finished, without any reference to the rupture of the membranes ; and a second, which commences from the moment of dilatation, and ends with the birth of the child. The efficient causes of labor are manifested during these two terms ; in the first, the contractions of the uterus form the *essential* principle of labor ; in the second, after the fetus reaches the excavation of the pelvis, then there is the *accessory* force of the abdominal parietes ; and it is only as far as these contractions are under the control of the mother, that labor can be called voluntary. The small part that this influence plays in

the combination of causes, can scarcely, however, entitle it to much consideration as a process submitted to the will, and capable in this respect of retarding or hastening the expulsion of the fetus.

Of eutocia, or simple, fortunate, or spontaneous labor.—It were useless to attempt to analyze the author's remarks upon the varieties of position in which the fetus is presented for delivery, and where the labor terminates naturally. The descriptions are precise, and will repay the student for a careful examination of them. The following is the author's classification of the several positions, but although they come under the first class, still they cannot all be called natural presentations. A dystocia, also, may take place with any of them, but this will not depend upon the position, but because the interference of art becomes necessary.

Head. 2 species.	Vertex. 2 species.	{ 1. Occip.-ant. 3 var.	{ 1. Left occip.-acet. 2. Right occip.-acet. 3. Occip.-pubic.
		{ 2. Occip.-post. 3 var.	{ 1. Left fronto-acet. 2. Right fronto-acet. 3. Fronto-pubic.
	Face. Only one species at the inf. strait.	Mento-pubic. 4 varieties at the superior strait.	{ 1. Right mento-iliac. 2. Left mento-iliac. 3. Mento-pubic. 4. Mento-sacral.
Lower end of the trunk, only one kind: the <i>Pelvis</i> .	3 shades.	{ 1. Feet. 2. Knees. 3. Breech.	{ 2 spec.
			{ 1. Sacro-ant. 3 var. { 1. Left. 2. Right. 3. Pubic.
Trunk. 3 genera.	{ 1. Lateral surface. One species. The shoulder. 2 varieties. 2. Posterior surface. One species. The back. 2 varieties. 3. Anterior surface. One species. The breast. 2 varieties.	{ 1. Head left. 2. Head right. 1. Head left. 2. Head right. 1. Head left. 2. Head right.	

Besides these, there are inclined positions of the head: 1. The temple; 2. The forehead; 3. The occiput; and of the breech there are: 1. The hip; 2. Sacrum; 3. The parts of generation.

Concluding the consideration of eutocia, M. Velpeau has appended some very practical precepts on the diagnosis, the hygienic treatment, and management of labor. The following will, in some measure, show in what manner the subject is treated.

“In certain cases the labor becomes slow, because the contractions are difficult, extremely painful, unequal or partial. The

first mentioned case ordinarily depends upon plethora, either local or general, which is the cause why the uterine fibres, engorged with blood, and as it were stupified, cannot contract with suitable energy; women who are strong, robust, sanguine, and very muscular, are most liable to this state of things, which is known by a feeling of general uneasiness, weight and distress felt in the hypogastrium and pelvis, a highly colored skin, and especially by the pulse, which is either strong and large, or contracted, small and hard; in this case, bleeding from the arm, by means of the depletion it occasions, frequently succeeds in restoring to the pains all necessary activity.

“The second case may be met with alone, or concurrently with the former; and as its cause is an exalted sensibility, whether natural or accidental, of the whole economy, or of the sexual organs in particular, it is proper after bleeding, if that has been deemed useful, to have recourse to baths, to the mildest anodynes, and even to the thebaic preparations.

“The third case is of much more frequent occurrence than the generality of practitioners suppose, and I can hardly comprehend why the authors make scarce any mention of it in the treatises put into the hands of students. The work of Wigan, which is highly esteemed in the north, proves that these contractions have fixed the attention of the German accoucheurs in a very special manner: among us, hardly any body but Madame Boivin speaks of it; but Burns and Dewees treat it somewhat more at length. Sometimes it is the fundus of the womb that contracts thus spasmodically, while the rest of the organ hardly contracts at all; sometimes, again, it is one of its angles, a portion of its anterior wall, of its posterior wall, or one of its sides; the pains are not less acute than they would be if the whole organ contracted, they may even be more severe, but they are in pure waste, or at least, far from having as much influence on the progress of the labor as the regular contractions. If the parietes of the belly are not too thick, we can, by applying the hand upon the hypogastrium, feel that the uterine ovoid is not even, that there are lumps or inequalities, and that, too, independently of the form of the fetus. Wigan, who gives to this disposition the appellation of tetanus, appears to me to have made too many divisions; practice can derive no benefit from it, and theory gains by it nothing but confusion.

“Whenever the general state of the patient does not contraindicate it, we must here also have recourse to bleeding, then to baths, and next to simple anodynes, diffusible anti-spasmodics, opiates, &c. I, for example, use with success a potion composed in the following manner: R. lettuce and wild poppy water ℥iv, orange flower or mint water ℥j, syrup of pink or white poppies ℥j, or syrup of marsh-mallows, ℥j, with extract of opium gr. i, or laudanum, from grs. v. to grs. x. Simple frictions on the belly, long continued, also succeed pretty often. They are sometimes performed with the hand alone, or with a flannel, either dry and hot,

or wet with oil of chamomile, camphorated alcohol, or cologne water, &c. Although nature herself frequently succeeds in restoring the natural order of things, this state is, notwithstanding, not to be overlooked, in the first place, because it indefinitely prolongs the labor, and in the next, because it may be looked upon as a morbid state, or at least, as evidence of great predisposition to diseases, or to inflammation of the womb.

"Spasmodic contractions of the os uteri have also been observed, and I have several times seen its dilatation completely arrested, or considerably retarded, for hours together, by this irregularity, which in general requires the same treatment as the preceding. In some instances, the os uteri is at the same time very sensible, dry, hot, highly irritated and painful, although regular in shape. A valuable remedy in such a state of things, and far more efficacious than hip baths, and emollient, mucilaginous, or narcotic injections, or various sorts of ointments usually recommended, is found in the belladonna ointment, proposed by Chaussier and Dr. Conquest, and frequently made use of by Madame Lachapelle, at the Maison d'Accouchement at Paris. Its employment, too, is followed with no inconvenience: when I have occasion for it, I direct one drachm of the juice or extract of belladonna to be triturated with one ounce of cerate or hog's lard; with the fingers I easily introduce a portion of this ointment, as large as a filbert, up to the os uteri, the whole circumference of which is soon anointed with it. The belladonna acts here as it does upon the iris, when applied betwixt the eye-lids a few hours previously to performing the operation for cataract, and often with a promptitude that is really surprising.

"In the spring of 1825, a young woman of good constitution was seized with labor pains at five o'clock in the evening; the labor went on regularly all night. The next morning, at six o'clock, the os uteri was as large as a three livres piece at least; from that time the dilatation progressed slowly, although the force of the pains did not diminish at all; a vein was opened in the arm; the agitation of the patient went on increasing, and the orifice continued in nearly the same state. M. Ribail, who had the care of the woman, sent her to the hospital, where I saw her at half past six in the evening; the os uteri was a little larger than a five franc piece, and formed a thin circle, almost sharp, hot, and extremely sensible; the pains still continued; the ointment was applied at seven o'clock, and before the clock struck eight, the delivery was completed.

"Conclusive as was this result, it nevertheless appeared to me difficult to attribute it exclusively to the action of the ointment, but since then I have used it in five different cases, and in all of them the effect has been, if not altogether as prompt, at least quite as undeniable.

"I have elsewhere said, in what manner the premature rupture of the membranes, or their too long continuance in an unbroken

state, might retard a labor, or render it a bad one. In the former case, we ought to do every thing in our power to favor the dilatation of the orifice, without increasing the power of the uterine contractions, for it is important to relieve the fetus as soon as possible from the dangerous compression it has to suffer; to fulfil this indication, it appears to me to be proper to direct the woman to walk about, to moisten the parts in some way, and especially to have recourse to the ointment of which I have just been speaking.

"In the latter, that is, where the point of the ovum is too slow in giving way, it must be ruptured. To be done without inconvenience, this little operation requires the combination of the following conditions: 1. That the dilatation shall be, at least, very much advanced; 2. That the pains shall be maintained, without any threatenings of inertia; 3. That the child shall be in a good position; and, 4. That there shall be no other obstacle to the delivery.

"Should the os uteri not be largely dilated, we should be exposed to the inconveniences connected with a premature rupture of the membranes; if the womb should cease to contract, or contract only a little, we might give rise to complete inertia and all its consequences; were the fetus badly situated, we should increase the dangers of the presentation, and should the resources of art become necessary, their application would be far less easy. But it should be well understood that these general rules are not without exceptions: for instance, where the fluid enclosed in the amnios is in too large quantity, it may be allowed to escape, even although the opening of the cervix is not considerable; the same holds, too, where the position of the child is not fixed, where the hips, shoulders, head, or any other part, is found to present by turns at the centre of the strait. In this case, we seize the moment when the head is well situated to rupture the membranes, because, were this rupture left to nature, it might as well take place while it is unfavorable as while the position is favorable. Where the bag of waters does not retain the shape of a segment of a sphere, is very much elongated, or pyriform, its presence being no longer of any use as to the progress of the dilatation, it should be broken without too much regard to the degree of the dilatation. The same principles guide us in respect to the strength of the pains; their absence ought not always to deter us, for the rupture of the membranes is often the best, and sometimes the only, means of restoring them."

Dystocia, or difficult labor.—Whenever by leaving a labor wholly to nature, it threatens to become dangerous, either to the mother or child, it then ceases to deserve the title of spontaneous. M. Velpeau considers the ordinary subdivisions of this class as arbitrary; he would rather base them upon the causes that may give rise to the difficulty. This is certainly

more philosophical than to found them, according to Baudelocque and others, upon the nature of the means employed to remedy the difficulty. The causes that render labor difficult, depend either upon the mother or the child; some are unforeseen, and may therefore be called *accidental*; others exist beforehand, and may be denominated *pre-existing*. The accidental are such as, acute inflammatory diseases occurring during labor, convulsions, syncope, &c., and some positions of the fetus, which become bad after the first pains. The pre-existing are, deformities and diseases of the pelvis, or organs of generation, stone, tumors, &c., transverse positions, mal-conformations, and diseases of the fetus.

Among the first sub-divisions, we find hemorrhagic dystocia. This we shall notice particularly, as the author's views of the efficient causes of flooding are an innovation upon the generally received opinion.

“From the time of Puzos, accoucheurs have generally placed the efficient cause of flooding in the detachment of the placenta; they state that the placenta separates itself from the internal surface of the womb, and thenceforth the blood flows abundantly from the large and numerous vessels which open on it. This opinion appears to me to be ill-founded. Puzos and his partisans have mistaken the effect for the cause. It is not the detachment of the placenta that produces the hemorrhage, but the hemorrhage, on the contrary, that detaches the placenta; blows, falls, and great shocks, may certainly affect the womb and its contents; but as the ovum constitutes a full bladder in immediate contact with the whole extent of the cavity of the organ that contains it, the most violent commotions would not be able to detach it. While ever the membranes remain unruptured, it cannot be conceived how the adherences of the placenta can be destroyed, otherwise than by the efforts of a fluid endeavoring to effuse itself into the cavity of the womb. It is astonishing that such a doctrine should have been maintained so long by so many celebrated men; for even admitting a previous detachment of the placenta, we should still have given no explanation of floodings. In fact, this detachment takes place every day, either wholly or partially, from the middle stage of the most natural labor, and notwithstanding, there is no hemorrhage. Besides, an anatomical disposition that has no real existence is relied on here, the ovum is merely stuck (*plaqué*) on the inner face of the womb, and not intimately united to it; the placenta and organ of gestation communicate with each other only by means of pores, and not by means of large vascular mouths.

“The efficient cause of flooding seems to me to be analogous to those of all other hemorrhagies, to that of epistaxis, for instance. The sanguine exhalation takes place in the womb as it does in the

nose, under the influence of a local congestion, an affluxion, a peculiar state of irritation, of the *molimen hemorrhagicum* so much talked of by Stahl. When this affluxion, or *molimen*, exists to a certain degree, the blood transudes with greater or less force, and from a more or less extensive surface, as happens during the presence of the menses; only, it requires a stronger impulsion, because, during pregnancy, the ovum that is compelled to detach in order to effect a passage, necessarily presents a certain degree of resistance to it; moreover, it seems to me, that in respect to its intimate mechanism, an uterine hemorrhage that does not depend upon any traumatic lesion, is always the same, at whatever period and in whatever condition it may occur, as well during gestation as during and after parturition.

“The idea which I now set forth, and which is nearly similar to that which has already been taught by Costa, M. Desormeaux, Madame Lachapelle, and M. Dugès, merits the most serious attention, and ought to have great influence on the therapeutics of flooding, and upon some other points of tokological science.”

We will not stop to make any extended remarks on this explanation. It is certainly opposed to all our previous notions on the subject, those particularly which entered into our early instruction on the management of the placenta. We were thus taught not to hurry its delivery, while the womb does not contract, for fear of producing either hemorrhage, or an inversion of the uterus. As far, however, as subsequent experience has enabled us to judge, we do believe now, that there is more danger of the last than the first accident. Instead, therefore, of waiting for hours for the renewal of the uterine contractions, and the spontaneous delivery of the placenta, or at least for its presentation through the mouth of the womb, we employ gentle traction after the lapse of a short time from the expulsion of the fetus. As yet we have not seen any accident occur, nor have we heard of any, from more experienced accoucheurs, where an interference after fifteen minutes or half an hour is practised. We will again recur to this subject when we come to the delivery of the after-birth.

If M. Velpeau be correct in his physiological views of the utero-placental circulation, that is, that the maternal blood is transmitted to the placenta by imbibition, (a favorite theory of M. Velpeau, by the way,) we can then easily conceive how his doctrine may be true; but if injections have been thrown, as it is said, from the uterus by continuous vessels into the placenta, we do not see how any determining cause, such as blows, a fall, dancing, &c., which may produce hemorrhage, can effect such results, without a lesion of this continuity, and a consequent effu-

sion of blood. The natural separation of the long continued apposition of the placenta to the uterus, cannot be used as an argument, for at the term of utero-gestation, every thing in connexion with the expulsion of the fetus and placenta, is in a ripened state; every present modification of the parturient female is prepared for a return to her pre-existing, unimpregnated condition. The doctrine of M. Velpeau, however, is not original; Andrea Pasta long ago doubted the opinion, that flooding was always produced by the separation of the placenta.* The subject is well worth investigating, not only for the sake of truth, but the result may materially affect the present precepts for the management of the placenta.

On the same point, we have the following in reference to the opinion of the rupture of the utero-placental vessels, the placenta being implanted over the cervix uteri. In this case, it will be observed, that the hemorrhage has a distinctive character; it never occurs except in the last months of pregnancy, or "from the period when the cervix begins to dilate from above downwards."

"When the placenta is inserted upon the neck of the womb, these two parts proceed together in their development until about the fifth, the sixth, the seventh, and sometimes even until eight months and a half; but from that time forwards, the environs of the orifice are so rapidly withdrawn from the centre, that a constantly increasing portion of the ovum necessarily remains without any adherence to the womb, and this portion, which is soft, vascular, and constantly on the stretch, may crack or even tear, and thus give rise to a hemorrhage, which puts the child's life much more at hazard than the mother's. On the other hand, this displacement does not in general take place, without the inferior portion of the womb being more or less irritated by it, and soon becoming the seat of an affluxion, a more or less decided congestion, and thenceforth, the *general efficient cause* of floodings is superadded to the peculiar cause constituted by the presence of the placenta on the cervix. Is it necessary for me to remark that these two causes, the rupture of some vessels of the placental parenchyma, and a state of congestion of the uterus, may exist separately; that although the former almost always super-induces the latter, it is not, however, impossible for it to exist alone, and that the latter may pre-exist, or even exist to such an extent, as to give rise to the most imminent danger, without necessarily combining with the other? Besides, it is well known, that blows, shocks, vivid emotions, and all the other causes of ordinary

* James' Burns. vol. I. p. 290

uterine hemorrhage, are equally fitted to produce it where the placenta is inserted over the orifice ; it therefore follows, that both these kinds of flooding depend on the same proximate cause, the hemorrhagic *molimen*, and upon the same occasional causes ; but that the presence of the placenta upon the cervix constitutes a peculiar determining cause, which rarely fails of being in itself sufficiently powerful to produce it."

Having said thus much on uterine hemorrhage, we will continue our quotations, as the subject is one of importance, as every physician must have felt it to be, who has had the treatment of a case of the kind. The diagnosis is governed by *precursory* and *accompanying* symptoms. As we are seldom called upon until after a quantity of blood has flowed sufficient to excite alarm, we only extract some of the author's observations on the accompanying signs of external and internal flooding.

"In external floodings, the precursory symptoms are succeeded by a discharge of blood from the external organs, and this characteristic is too evident for it to be needful to indicate any others ; nevertheless, it has appeared to be difficult to some persons, not to confound, at times, a real flooding with a simple menorrhagia. Baudelocque did all in his power to clear up this point of diagnosis : according to him, menstruation occurring during pregnancy differs from metrorrhagia, properly so called, in respect that it takes place without any pain, without effort, without any notable disorder of the health, without any antecedent *molimen* ; in respect that the fluid which escapes is serous, very slightly coloured, and does not coagulate ; in that it is very small in quantity, terminates in two, three, or four days, appears at the ordinary epoch of the menstrual flux, and that far from debilitating, it is, on the contrary, followed by an improved state of health, and greater freedom in the exercise of the functions ; while the very opposite circumstances are observed in a real hemorrhagy. But, in looking a little closer at the subject, it is soon found that these characteristics are for the most part quite illusory. In the first place, it is a fact that, in many women, the menses are frequently preceded by the same symptoms as the most dangerous floodings, and that the blood of the menses, far from being fluid and colorless in all cases, is, on the contrary, sometimes charged with cruor and very coagulable ; besides, flooding is not always accompanied or announced, by the general signs heretofore indicated ; it may be very moderate in the beginning, and formed of serous blood, or blood charged with fibrine, and coincide with one of the catamenial epochs : indeed, as the mechanism of menstruation is the same with that of metrorrhagia, I do not see that it is possible to distinguish the one from the other by any special signs. Moreover, this differential diagnosis

leads to nothing; while the flow is slight, the precautions prescribed by art, are incapable of interfering injuriously with the menstrual function; and as soon as the blood escapes in sufficient quantity to require more active interference, it would be almost ridiculous any further to seek to discriminate between menorrhagia and metrorrhagia.

“In *internal flooding*, admitted by Mauriceau, De la Motte, Levret, Baudelocque and Merriman, who have related cases of it, the blood tends to accumulate between the placenta, or membranes, and the corresponding part of the womb; a lenticular coagulum might in such a case form with variable rapidity, depressing the ovum in an eccentric manner on the one hand, and on the other compelling the uterus to distend mechanically, so as to receive the fluid that is effused: I am aware, that in presence of facts, argument ought to be silent; but then, those facts ought to be incontestable, well noted, and properly interpreted: now can these conditions be recognised in a majority of those that have been mentioned in favor of internal floodings? Is it quite certain that the blood in some instances found betwixt the placenta and the womb had accumulated there during life, rather than immediately after death; that that which escaped in torrents as the membranes gave way, was not effused beforehand in the interior of the amnios? How, indeed, can we conceive that the blood which escapes from the uterine vessels, in somewhat considerable quantities is capable of dilating beyond measure, and almost instantaneously, the cavity of the womb, instead of running between the gestative organ and its contents, so as to escape outwards, or of rupturing the membranes, and becoming effused within their cavity? How can we admit that the adherences of the placenta, which are habitually, so weak, could resist the effort of the blood, tending to form a new cavity for its own reception, more powerfully than the uterus, which yields with so much difficulty?

“Until these various questions shall be solved rigorously, I shall continue, with Mesdames Boivin and Lachapelle, to think that the existence of internal flooding, such as it is generally understood, ought not to be admitted, except under pretty numerous restrictions, and also, that what has been hitherto said in relation to it needs confirmation.

“It should, in all cases, be accompanied with the same symptoms as external hemorrhagy, from which it should be distinguishable only by the absence of blood flowing externally, or by the unnatural size of the womb or abdomen.”

Prognosis.—This must be formed, of course, from the effect produced,—not from the quantity of blood lost. When the debility is not great, the pulse retaining some strength and hardness, and the skin and features are not greatly altered, the dangers of the moment need not excite alarm. There is here great

encouragement for the exercise of promptness and perseverance, which should be redoubled when the face grows pale, the extremities grow cold, and dimness of sight, and a weak, tremulous, irregular pulse appear. There is little hope where lipothymia, syncope and convulsions supervene, especially with frightful rapidity. As a general rule, it may be established, that the danger is greater for the mother, as the pregnancy is the more advanced, and the reverse is true with the child.

Treatment.—As a few seconds more or less, may determine the fate of the mother or child, it is imperative upon the physician, that he should know how to choose his remedies, and to apply them properly, exercising at the same time, the greatest coolness, decision and skill. The application of mustard cataplasms, as recommended by M. Velpeau, is new to us; the combinations of sugar of lead and opium, we can confidently assert to be one of the best prescriptions that can be used, not only in uterine, but in most active hemorrhages. Dr. Hosack used to say in his lectures, that the benefit derived from the application, should be attributed altogether to the opium; but we must differ from him, for the simple reason that we have prescribed the acetate of lead without the opium, and have seen the best results follow. When combined, we are in the habit of using larger doses than is common. To one grain of opium we add five grains of the acetate of lead, to be repeated at intervals of three or four hours if necessity require. Occasionally very slight gripings may follow,—a dose of castor oil will readily relieve this consequence of the lead.

“The means to which we can have recourse, are extremely numerous; some of them are, to a certain extent, applicable to all cases indiscriminately, and others are to be employed only under peculiar circumstances.

“Rest, low diet, a horizontal posture upon a hair mattress, rather than upon a feather bed, in a chamber which ought to be darkened rather than too much lighted, quiet and not noisy, cool, and well ventilated, rather than hot and close, with diluting or cold acidulous drinks, very frequently suffice, when early recourse is had to them, in moderate cases of hemorrhage: if the woman is strong or sanguine, and especially if there have been precursory symptoms, if there are rigors, and the state of the pulse warrants it, six or eight ounces of blood may be drawn from the arm. When these slight succors do not succeed at once, and where there has been no precursory *molimen*, and the woman is naturally weak, we have recourse to revulsives, and to external refrigerants. We prescribe manuluvia, either simple or containing mustard, dry friction of the arms, the breast and along the spine, and apply large cups to the

breasts ; aspersions are made upon the abdomen and inner part of the thighs, with cold water, either alone or with the addition of vinegar, ether, or ammoniac, &c. ; compresses wetted with the same liquids, or with ice water, may also be applied to the same parts. Burns praises the effects of alum ; Duncan and Rigby seem to have derived great advantages from the use of opium and sugar of lead (acetate of lead,) which had previously been recommended by Ettmuller, &c. and is frequently employed by Dewees ; the digitalis is also recommended by many of the English physicians ; but these various articles are rarely made use of in France. Rhodion, Hamilton, and some others, have recommended the application of tight ligatures to the limbs. A practice that seems to me to deserve the attention of practitioners is the application of a sinapism between the shoulders ; I have made use of it often enough, and in cases sufficiently various, to enable me to affirm, that it is one of the most powerful and most useful revulsives that can be recommended. MM. Trastour, Laroche, Nivert, and several young physicians, who have seen me employ it, or put it in practice themselves, have already made mention of it in their theses. I have elsewhere stated the anatomical and physiological considerations by which I was led to its employment. I resort to it both in the first months of pregnancy and during labour, as also in the interval betwixt these periods ; and the effect has always been extremely prompt. A young woman, nineteen years of age, was brought to the *Clinique Externe* of the School of Medicine, towards the close of 1825 ; she was about three months gone with child, and had been flooding for twelve hours ; we tried the remedies indicated higher up, but the flow continued nevertheless to increase until evening ; being then alarmed by her extreme weakness and the appearances of approaching syncope, I applied a mustard cataplasm to her back ; in a quarter of an hour the diminution of the hemorrhagy was evident ; it soon became a mere draining, which continued until the next day, when the ovum was expelled.

“There ought to be nothing surprising in such a result, when we reflect with what ease people in the country sometimes put a stop to epistaxis, by placing a key, or some pieces of linen, or the like, wetted with cold water, betwixt the shoulders, and with what rapidity sympathetic irradiations are brought into play by the action of mustard. Nevertheless, it would be unreasonable to think, that the action of this medicament is infallible, and that it ought to be employed in all cases. Reason indicates that it would be injurious rather than useful, where the flooding is attended with a general re-action of the system, and the symptoms of the hemorrhagic effort continue in full force ; both in pregnancy and during labour, as the placenta is to a great extent detached, and its expulsion inevitable, it might serve to diminish the impetuosity of the affluxion, but there would be little wisdom in relying upon it, to completely suppress a hemorrhagy that had already become serious and alarming.”

Of the use of the *tampon* we need say nothing, as the subject has been made familiar to the most of our readers by the judicious remarks of Dewees. The other resources upon which we must rely in arresting the danger, are, 1st, either the dilatation of the os uteri and rupture of the membranes, and thus bringing on the contractions of the womb, and inducing a premature delivery, which is less dangerous, both to the mother and child, than at once resorting to forced delivery, by introducing the hand, or when possible by the use of the forceps. If, however, the uterus has not sufficient powers for the expulsion of its contents, we may then hasten to deliver the child by instruments, if the os uteri is sufficiently dilated, if not, M. Velpeau observes, the child is to be turned, and properly brought down by the feet. This is particularly to be observed, where the placenta is implanted over the cervix. There is another method, recommended by Puzos, which may be tried, and we think, with frequent success. Before resorting to either of the above,—one, two or three fingers are to be introduced into the orifice, and by titillation or irritation, the womb may be induced to contract sufficiently to stop the hemorrhage.

Convulsive dystocia.—This alarming accompaniment of pregnancy, is scarcely less dangerous to the child, than to the mother. It may occur, so as to make the labor preternatural under two conditions of the os uteri; the one where it is rigid, and but partially dilated, the other where the converse of this condition is present. The pathology of the disease is thus noticed.

“Where the woman recovers her senses in the intervals of the paroxysms, the convulsions have been denominated *epileptiform*; in the contrary case, and especially where they are accompanied with stertor and coma, they are called *apoplectiform* or eclampsic. This division can be of no use, further than this—viz. that the former, which are more easily confounded with epilepsy or hysteria, are rarely so dangerous as the latter; but in fact they are only different shades of the same affection.

“The examination of the body after death is far from always giving a satisfactory explanation of the severity of the symptoms. A small quantity of serum in the ventricles of the brain; the veins and sinuses of the brain more or less engorged; the meninges and cerebral substance somewhat red, or of a natural appearance; in some cases evident traces of congestion, or a slight extravasation of blood; but, most generally, no appreciable lesion, is what the unprejudiced observer finds within the cranium. Neither have the other splanchnic cavities exhibited any alterations, that constantly occur in these cases; the heart is flaccid and almost empty; the

lungs choked up or pale; a few ounces of citron-coloured or reddish serum in the serous cavities, are the principal traces left by the disease in the abdomen and thorax."

The *treatment* must vary in some measure, with the variety of forms that the disease assumes. Where the pulse is full, and the convulsions take on the eclamptic form, we need scarcely observe, that bleeding must be our sheet-anchor. Under the circumstances to be mentioned, the belladonna also may be relied on with promises of much benefit; we cannot by any means, advocate the incising the cervix, except as a very last resort, and then we should hesitate upon the successful result of the operation.

"Rigidity, schirrhous induration and spasmodic contraction of the os uteri being sometimes the only, or at least the principal cause of convulsions, we ought not to omit to examine it carefully. Provided that it should seem to be the point of departure for the disease, we should apply to it some of the opiate cerate, from which M. Schweighaeuser asserts that he obtained very successful results, or what is better still, the belladonna ointment. Were it really too hard to be overcome by the efforts of the womb, I do not see that it would be possible to dispense with incising the neck. Upon this subject the fears of Madame Lachapelle are, to say the least, exaggerated: for I have not learned that the passage of the head, after this operation, has in any case enlarged the wound, so as to perforate the peritoneum. However, notwithstanding what has been said by M. Bodin, it is a resource not without danger, to which we should not, under any pretext resort, except in case of indispensable necessity.

"Bleeding has always enjoyed much favor among obstetric physicians; Mauriceau, De la Motte, Puzos, &c., have repeated it six, eight, ten, seventeen, and even as much as eighty-six times in one pregnancy in the same woman! The loss of blood is always useful where there are signs of congestion about the head, a strong pulse, or any signs of plethora. The blood is sometimes drawn from a superficial vein, sometimes by means of leeches or cups, and at others by all these means together. Except where there is some particular counter irritation, we commonly begin with a general bleeding of six, eight, ten, twelve, or even fifteen ounces, according to the severity of the disease, and the constitution of the woman. After this first venesection, if it appears to produce some amelioration, it is repeated a second time, a third, or even a fourth, at intervals more or less considerable, always remembering that in this way the strength of the woman is rapidly exhausted. When the general bleeding can no longer be repeated with the hope of obtaining any decided advantage from it, leeches may be applied to the number of fifteen, twenty, thirty, forty, or fifty, behind the

ears, or on the neck, or even in the neighborhood of the vulva, provided there should be any appearances of irritation or evident congestion in the pelvis. Should the coma be very profound, and blood not to be got except in very small quantity, scarified cups on the nape of the neck, or on the mastoid apophyses, ought also to be tried. As to bleeding from the temporal artery, or even from the radial artery, proposed by some persons, I do not think that it deserves any preference over venesection ; but which vein ought to be opened ?”

Tepid baths premised by bleeding,—oily or irritating injections, revulsives, &c., are all beneficial in place. M. Velpeau seems also favorably inclined to Merriman's practice of calomel purges, lotions to the head, &c. For ourselves, we have seen some reasons to think highly of calomel as a useful remedy in puerperal cases. We prefer it to any other purgative after delivery. It is not at all astonishing that its action should be beneficial, independent of its mere cathartic effect, when we recollect for a moment, under what peculiar modifications the liver has been placed, by the general irritations of the system during gestation. The gastric derangements, the mental anxiety, the encroachment of the adjoining viscera upon its position, and a series of circumstances, sympathetically affect this organ in no slight degree. This derangement indeed, is evidenced by palpable proofs, such as the ephelides or stains upon the skin, and the general depravation of the hepatic secretions. In the use of calomel, we prefer large doses, say twenty grains. In this way, we quiet any irritation, and as a sedative prefer it to opium, in lessening the violence of the after pains. Dr. Lewis Belden of this city, has seen it productive of decided advantages in puerperal convulsions, several interesting cases of which, where he used it, we hope soon to lay before our readers.

The following are M. Velpeau's conclusions upon the general treatment. When the convulsions supervene upon a flooding, or in persons who are much debilitated, or those of a lymphatic constitution, &c., we can only resort to local bleeding. In this case, if they occur after delivery, and the lochia have ceased to flow, leeches may be applied to the labia or groin,—or, according to Chaussier, to the mastoid apophyses.

“ When the vascular system has been depleted, if the state of the patient admits of it, a tepid bath should be prescribed ; if irritation or spasmodic contraction of the os uteri appears to be the cause of the phenomena, some opiate cerate, or belladonna ointment, should be applied to it. After a flooding, or a painful, or a fatiguing labor

or delivery of the placenta, some analeptic broths, and a few spoonfuls of sound wine will occasionally be found the best remedies that can be made use of. Where the woman is delicate and nervous, we have recourse to sedative infusions and waters, narcotic preparations, &c. Siniapisms, blisters, scarifications and other revulsives are, in severe cases, particularly useful as accessory in effect to blood-letting, or as supplementary to those evacuations, where they are themselves inadmissible. Finally, should there be manifest symptoms of disordered stomach or bowels, without any of the signs of inflammatory irritation, I do not perceive that there would be any temerity in promoting either the vomiting or the alvine evacuations by means of gentle emetics and purgatives; but, during the labor, the best remedy beyond dispute is the delivery of the child.

“Where the disease comes on before the end of the sixth month, we ought to do every thing in our power to succeed without soliciting the expulsion of the fetus; its viability being at a later period possible, there is no longer any need for so many precautions on this head.

“To admit of the child being delivered, either with the hand or with the forceps, it is necessary that the dilatation of the cervix should be very advanced, or at least that the os uteri should be soft enough to admit of the womb being entered without the employment of any great degree of force. However, if a trial have been ineffectually made of ointments, injections, and baths; if the woman or the child were in imminent danger, and a forced delivery the only means of safety; and in a case where the os uteri should be thin, but hard and undilatable, and obstinately resist the contractions of the womb, there ought to be no hesitation in following the counsel of M. Bodin, to make one or more incisions into its concave edge, or in resorting to what has been called, since the time of Simpson and Lauvergeat, the vaginal-cæsarian operation.”

In hastening to a conclusion of our extended analysis, we pass over much interesting matter, connected with the other varieties of accidental, and all that is said on essential dystocia. In the section on the wrong presentations of the fetus, M. Velpeau makes some remarks on *spontaneous evolutions*. Since Denman called the attention of the English practitioners to the subject, by his large collection of cases, and his doctrine of the manner in which the evolution takes place, much has been said and written, concerning the phenomenon. Dewees says, he has never seen a case, and very correctly observes, that the evolution is by no means to be depended upon. M. Velpeau adds the following to the list of cases, and concludes that there is nothing extraordinary in the phenomenon of evolution.

"A young woman, in her second pregnancy, was admitted into the Hospital of the Ecole de Médecine, at ten A. M. in the month of August, 1825. The os uteri was then but little dilated; nevertheless, I discovered that the shoulder presented in the second position. The waters were not discharged until three o'clock in the afternoon; four students, who were already well advanced, touched and recognised the presence of the shoulder, as I had done. I did not wish to bring down the feet; the pains were neither very strong nor very frequent, and I had some confidence in the assertions of Denman. At eight o'clock the shoulder was found to be evidently moved towards the left iliac fossa, and I could easily feel the ear to the right. At eleven o'clock the temple was nearly in the centre of the orifice: the energy of the contractions was greater, and the os uteri completely effaced. At midnight the occiput came down, and in the space of an hour the child was expelled in the right occiput-acetabular position."

When a physician first enters upon the practice of midwifery, there is probably no part of the precepts he has acquired from books, which he so soon *unlearns*, as that concerning the management of the placenta. After the expulsion of the child, it is generally directed to wait at least six hours before interfering with the delivery of the after birth. Nothing can be more unnecessarily tedious than this, and there are none feeling it to be so, but who very soon make out the discovery, that a little manual assistance, not only safely relieves the mother, but concludes the obstetric visit, by less than one quarter of that time at least. There is much good sense in the following, and we like the candor with which it is expressed. The whole of this, the concluding chapter, is worth attentive perusal.

"Although the organism generally suffices to finish the expulsion of the after-birth when it has reached the excavation, some cases are, however, observed, in which it would remain there for an indefinite period, provided its escape were not promoted by artificial means. It is on account of this tedious slowness, and to relieve the woman of her fatigue and uneasiness of mind, that a natural or simple case of delivery of the placenta is scarcely ever wholly abandoned to the efforts of nature. De la Motte, Deventer, Peu, and some modern authors, are scarcely willing that we should wait for it for half an hour: according to them, if we do not act at once, the orifice closes, and may retain the after-birth, from whence accidents of greater or less severity may ensue. Levret and Smellie, Baudelocque, and almost all practitioners of the present day, advise us, on the contrary, not to act until the placenta is completely detached, and presents itself spontaneously at the orifice of the womb.

"Both of these doctrines, if taken according to the very letter, appear to me to be equally incorrect. The practice of the ancients, if followed without exception in all cases, would doubtless sometimes be dangerous ; but I am induced to believe, that at the present day we have fallen into an opposite extreme ; by endeavoring to follow nature as closely as possible, the end which the accoucheur ought to hold in view has been lost sight of.

"Besides, if it is proper to act as soon as the placenta is detached, I do not see wherefore the delivery should be so frequently deferred ; for except in a few cases, this detachment takes place previously to the expulsion of the child. I can scarcely conceive, indeed, how the womb can be reduced to a fourth or fifth part of its volume, without destroying the delicate filaments which connect it to the ovum. Most of the facts that are cited to show that the adhesions of the placenta continue to exist after the birth of the child, are any thing rather than conclusive, and do not seem to have been properly interpreted.

"I know that when the cord has been pulled at an improper time, it has been found to occasion the inversion of the womb ; but, in the first place, this accident is a very rare one ; and next, it does not prove that the union of the placenta and womb was maintained at the time ; for, if such tractions are performed while the womb is soft and uncontracted, whether the adhesions of the placenta be continued or not, they occasion the woman to bear down, and it is very natural that the womb should then be inverted. The cord has often been pulled so as to break it off, so as to give pain to the woman, and make her feel a dragging sensation within, and the placenta, notwithstanding, has not been moved at all. All this is doubtless true ; but without speaking of the pretended uterine crista which have formerly been so much spoken of, does the womb never contract, except in a regular manner, upon the secundines ? Does it not, on the contrary, mould itself, in some sort, upon the anfractuosités of the placenta, so as to make its extraction somewhat difficult ? And then, are we sure that the extracting force has been applied in the best possible direction, and exactly to the proper extent ; have not the faults of the accoucheur been most commonly attributed to the adhesion of the placenta ? In my amphitheatre I have many times seen the students leave off pulling at the cord from a conviction that the placenta was not detached, whereas I had only to pull in a rather more methodical manner than they did, in order to terminate the delivery at once, and without difficulty, in their presence. In a woman who came to be delivered at the *Hospital de l'Ecole*, and who had a flooding, the cord had already been pulled so as to break it off. I introduced my hand into the womb, and found no adhesion at all. Being called to visit a woman, in the *Rue de la Montagne-Sainte Genevieve*, whose child had been born six hours, I learned that all imaginable efforts had been made to bring away the placenta. The physician had asked for assistance only because he was convinced that the hand must be introduced

into the womb, in order to destroy the adhesions of the placenta. He repeated his attempts in my presence, and I soon found he would not succeed. I now took hold of the cord, and found that there was no particular difficulty in bringing away the after-birth. I have so frequently met with these cases of supposed adhesion; I have so often introduced my hand into the uterine cavity with the design of destroying them, when I was informed that they existed, and when in fact they had no existence; and from reasoning it is so difficult to admit them, that I do not hesitate to look upon their occurrence as very rare. How can we conceive, in fact, that they should give way so easily under the feeble contractions that take place after the expulsion of the child, after having resisted the violent efforts of the close of the expulsive stage of the labor? I believe, therefore, that if it is not prudent to deliver the after-birth immediately after the escape of the child, we ought to look for another reason for the caution, than the non-detachment of the placenta; that the object of the uterine contractions, and their effect, is far more to push this body gradually through the os uteri, and into the vagina, than to break up its union to the womb; that it is not indispensably necessary for the woman to have colic pains and dragging sensations in the loins before the accoucheur delivers her; and that there are some disadvantages in not acting as soon as a favorable opportunity presents itself.

“Being (in 1823) still imbued with the prevailing ideas upon this subject, I used to wait until the pains came on before I proceeded to act, and I stopped as soon as I perceived the slightest resistance; and in the short space of six months I was obliged to wait, on one occasion ten hours, on a second twenty-four, on a third thirty-six, and on a fourth forty-eight hours, before the placenta was delivered, and in the last case, was even obliged after all to introduce the hand in search of the placenta. Since that time I have never been obliged to wait more than one hour: for me it suffices when the womb has contracted and become hard, even although the woman have felt no pain, nor dragging sensation, and up to the present time I have had good reason to be satisfied with my mode of proceeding.”

We think that our readers will now be able to appreciate in some measure the value of Mr. Velpeau's work. In some few instances, indeed, it contains a looseness of expression, always censurable in elementary books, and we occasionally find a substitution of conjecture for philosophical induction; but it would savor much of captiousness, had we labored to point out the few exceptions, where there is so much for commendation. Previously to the appearance of the translation, we had had occasion to refer to the original volume, and from the idea we then formed of it, we were the better pleased in seeing it in an American dress. The Philadelphia publisher has done well in

giving the profession this additional means of an acquaintance with an industrious and erudite physician, whose name had become somewhat familiar, by his excellent treatise on surgical anatomy, translated by Dr. Sterling, and noticed in our *first number*. We have a slight fault, however, to object against the translation. It may seem like fastidiousness, but the practice has become so common, and we believe it withal to be so reprehensible, that we think it worth a word or two. We have reference to the practice of dedications. This may be well enough suited to countries of an acknowledged aristocracy, where genius or talent can only hope to thrive under the patronage of the great; and where he who receives the adulation is often more honored by the dedication, than he is who offers the incense. There is a vanity, too, and a deal of sycophancy in the thing, that is disgusting to every one who sets a proper value on self-respect. As a mark of real esteem, there may be some excuse for the occasional introduction of a dedication in an original work; but to endorse a translation, a mere piece of drudgery, with some prominent name, strikes us as the most finished piece of consequential littleness that ever entered the imagination of any one. The translator dedicates what? Why that which the publisher deserves as much credit for giving to a profession, or general community, as he does who merely accomplishes the school-boy task of transmuting another person's thoughts from one language into another. We could wish, for the sake, at least, of consistency, that *American* physicians would look upon the practice in the light that we do, and reflect, too, for a moment, upon what is due to themselves, as members of a learned profession.

J. J. G.

ART. III. 1. *A Practice of Physic, comprising most of the Diseases not treated of in "Diseases of Females," and "Diseases of Children."* By WILLIAM P. DEWEES, M. D. Adjunct Professor of Midwifery in the University of Pennsylvania, &c. In two volumes 8vo. Philadelphia, Carey & Lea, 1830.

2. *A Treatise on the Practice of Medicine. In 2 vols.* By JOHN EBERLE, M. D., Professor of Materia Medica and Obstetrics, in Jefferson Medical College, &c. Philadelphia. John Grigg, 8vo.

To compose a system of the practice of medicine, is un-

doubtedly a task at once the most difficult in execution, and precarious in its chances of success, of any that could be undertaken by a medical writer. The materials to be embodied into such a work are so numerous, so widely scattered, and so amply diversified; the labor and diligence requisite to collect them, not from the storehouses of ancient learning only, but from the interminable fields of modern observation and inquiry, so great; and the higher faculties of mind indispensable to select, combine, and arrange them into order and method, so rare, that it seldom indeed falls to the lot of any one individual engaged in the active duties of his profession, to unite these uncommon facilities. Yet experience is absolutely necessary, neither limited in extent, nor confined in scope; and with this experience must be blended those habits of abstract speculation, and of literary composition, of which the cultivation is generally found incompatible with the attention to minute details of fact, which alone can convey practical knowledge. Experience alone will not suffice, as we have abundant evidence in the massive volume of Dr. Thomas—*rudis indigestaque moles*. Nor does the most extensive learning avail, unless informed and confirmed by long and patient clinical converse; to this cause must be imputed the failure of Good's Study to satisfy practical inquirers, notwithstanding its endless, subtle, and ingenious divisions and sub-divisions, and its boundless accumulations of curious facts, unsupported as they are, by the vivifying principle of his own observation. Hence it is, that although so many excellent treatises have appeared on this subject, so few have succeeded to arrest attention, and scarcely more than one has outlived its author. Dr. Good's Study is invaluable to the student, and Gregory's Practice is far above mediocrity, and enjoys a deserved popularity. Yet it cannot be denied, that Cullen's First Lines still maintains its station, unrivalled among systems of medicine in the English language. And we should as readily admit his claims to be considered a proficient in history, who was ignorant of Hume and Gibbon, as to pronounce favorably on the qualifications of the student of medicine, who had not attentively mastered the admirable, simple, and classically written sections of the great Edinburgh teacher.

It will scarcely be considered a disparagement to the authors of the volumes now before us, to say, that they fall below the lofty standard to which we have now referred. Their degrees of merit are, however, divided by long intervals, both as regards their intrinsic matter and their style.

The work of Dr. Dewees has, indeed, more than disappointed the expectations which we had been led to form upon its an-

nouncement some years since. Its very title proves it obnoxious to severe criticism. "A Practice of Physic," comprising most of the diseases not treated of in "Diseases of Females," and "Diseases of Children." The omission of important affections, because they are described by the same author in other books, may be a very profitable accommodation to the bibliopolist and his retained writer, but will be little satisfactory to the purchaser, who has vainly flattered himself with having secured a complete system of the practice of physic. Nor do the omissions rest here:—they extend to "many minor diseases described by authors," and also to more with regard to which "we" (that is, Dr. Dewees,) "have not been sufficiently well satisfied with the investigations of others, nor with our own proper experience." The reader will not be a little surprised, and the deceived purchaser not a very little mortified, when they find that among these cases are jaundice, rickets, tetanus, hydrophobia, and the neuralgiæ! Experience is necessary to qualify a writer to prepare a system of practice. But surely it does not thence follow that he must exclude from that system every affection which he has not himself seen. As well might the writer of a dictionary be excused for omitting words received into the language, because he himself had never made use of them in his writings. In the cases in point, we are at an utter loss to account for the want of observation in Dr. Dewees. Can it indeed be possible, that in his long and vauntedly successful professional career, he has never seen a case of jaundice, or even of tetanus, or hydrophobia, or of the neuralgiæ? And is all the speculation which has, of late years more especially, been indulged in on these diseases, so very unsatisfactory to Dr. D., as not to merit even passing notice? "We, however, trust," kindly interposes the author, "should opportunity be given us, to treat of them more satisfactorily at another time." Captiousness will not, we hope, impute the delay to an habitual, not to say an interested proneness to furnish extra volumes to a munificent press. The introduction or substitution of sixty or more pages of general observations on nursing, and of minute directions respecting utensils proper to be used for evacuations, &c., all which have been sufficiently explained in Buchan's Domestic Medicine, or the Guide to the Sick Chamber, will not, it is to be feared, be deemed a compensation for the important omissions, made at the *present* time. Dr. Dewees should have given some credit to his readers, for a knowledge of these familiar duties, essential, indeed, but not worthy of a place in a systematic treatise of diseases.

Of the style of Dr. Dewees we cannot speak without pain.

Literature enters, unfortunately, but too little into the preparatory education of members of the medical profession. Violations of grammar the most gross, and errors of orthography, which would disgrace a tyro in the forms of a liberal academy, too often obtrude themselves upon the inspection of those who are constrained to maintain an extensive correspondence even with doctors of medicine. The very limited qualifications requisite to procure a license, or even a diploma, of the doctorate, in our highest manufactories of these parchment charms, are the main cause. The misplaced ambition of men, unfitted by previous education to enter the lists of medical authorship, acts no less powerfully. Among these, it is a duty which we owe to our profession, no less than to the cause of learning generally, to enumerate Dr. Dewees. It may seem hazardous and gratuitous to bring thus before the tribunal of criticism, a gentleman who stands deservedly high in all the private relations of life, and whose practical ability and skill are known to us, both by the reputation in which he is held, and by an attentive perusal of his writings, to be far above mediocrity. But the interests of our indigenous medical literature impose upon us the painful task, and we cannot shrink from its performance. It were difficult, then, in any department of science, to find an author so voluminous as Dr. Dewees, who had, to all appearances, so little prepared himself by previous discipline, for public composition; who has so little improved himself by incessant exercise in the art, or so little acquired even an ear for accuracy, if not beauty of style, which long practice will spontaneously impart, in a greater or less degree, to almost every writer. For proofs of our assertion, we might point to almost every page of every one of Dr. Dewees' works, and, in so doing, we would not include ungraceful sentences, or ambiguities of expression, with all of which they abound, but confine ourselves simply to the most unpardonable breaches of the ordinary rules of syntax, and of no one more frequently and pertinaciously committed, than of that most familiar one, which directs, that the nominative case shall agree with its verb in number and person. Now, the higher graces of style are not to be looked for, nay, they are generally misplaced, in didactic works. Neatness, precision, purity, and propriety of language, can never be departed from with impunity. They are negative merits, not to be dispensed with, and no where so imperatively called for as in elementary treatises intended for the use of students.

If the style of Dr. Eberle does not come to us recommended by those inimitable attractions for which Cullen, Rush, and

Sydenham are so conspicuous, it is at least not defaced by positive blunders. If it wants their ease and simplicity, and is even ponderous at times, it indulges in no vulgar licentiousness of speech, and never descends below the dignity of scientific expression. His treatise is, at least, composed *secundum artem*, and no where evinces defects of preliminary education in its author. And there do not occur so many omissions of important subjects, or so much intrusion of superfluous details, as we have to complain of in the elements of Dr. Dewees. Of the intrinsic value of its matter, we shall have occasion to speak, when we come to treat of particular diseases. Before proceeding, however, to this most interesting portion of our labors, we must be indulged in a few remarks applicable to both of the treatises before us, and which may not be deemed inopportune.

It has often been urged by foreign critics, that American literature wants originality, and is indebted for all its treasures to its imitation and copy of European models. The countrymen of Franklin, of Irving, of Edwards, and of Rush, may proudly disclaim the charge. And medical authors, more especially, have in the United States exhibited a fund of mental resources, both in their speculations and in their practice, which should have secured to them a particular exemption from the invidious denunciation. To the illustrious name, we have already placed side by side with the brightest which have adorned the annals of philosophy, history, divinity, and polite learning, we could add many others, whose researches have been useful to the cause of general science, while they added peculiarly novel riches to our own favorite department. Of the many which might be cited, it is enough to allude to Miller, Bayley, Hosack, and Chapman, in practice; Physick, Mott, Smith, and Dorsey, in surgery; Barton, and Bigelow, in *materia medica*; Mitchill, and a whole galaxy, in the natural sciences; and finally, the Becks, in medical jurisprudence, a science hitherto much neglected, and for the more successful cultivation of which they may be said to have laid a solid foundation, both in this country and in Great Britain. This prominent list might be swelled out by the additional names of hosts of physicians who have, by their unassisted exertions, contributed ample funds to the increase of the stock of knowledge on almost every branch of medical pursuit. Their labors are recorded either in their separate works, or in the extended pages of our numerous periodical publications. They deserved special notice in systematic works, written in America by American physicians; yet will it be found, that in both the treatises of Dr. Eberle and of Dr. Dewees, the reference to

them is rare and spare indeed, and that even on subjects which have been signally illustrated by the observations and discoveries which they contain. Take, for example, the chapters on yellow fever. No disease in any age or country ever occupied the attention of physicians with more intense interest, than has this cruel and desolating epidemic that of American physicians within the last forty years. Never had any medical subject bestowed upon it more talent, ingenious speculation, or original, profound, and masterly powers of reasoning, than they brought to the discussion of this one engrossing theme. Yet are all their industry, and all their vast acquisitions, passed over with scarcely a notice, in both these systems. Of ten references at the bottom of his pages, Dr. Eberle has four only to American authors. The very name of Edward Miller is not adverted to! Rush and Physic are indeed mentioned by Dr. Dewees, but it is in an incidental manner only, and without allusion to their invaluable publications. A similar silence is observed, with but few exceptions, on *almost all* other similar subjects. We can scarcely be excused for pettishly censuring foreign authors because they omit to notice American writings, when our own systematic compilers are wilfully silent on their merits, or even their existence. It is time that an *American* system of the practice of physic should be produced, consecrated to the great object of describing the diseases, and methods of treatment, peculiar to our country, and of indicating the indefatigable research, and the numerous, valuable, and diversified discoveries and inventions of our own physicians.

Fevers.—The doctrine of Broussais has not made many converts in the United States. American physicians, imbibing, perhaps, a spirit of independence from the political institutions under which they live, seldom yield the dominion of their minds to the exclusive sway of doctrinal masters, but reserve their judgment in that state of indifference which Locke hath so admirably described, as favorable to the best interests of truth. The unbounded influence once exercised by the brilliant genius of Rush, may, perhaps, be cited as evidence of the contrary; but that eloquent teacher and fascinating writer lived in the infancy of the Republic, when the great mass of the profession enjoyed few opportunities to acquire more than the rudiments of knowledge, and when they were, therefore, greedy to avail themselves of the first ready-made opinions submitted to their acceptance. The character of the diseases prevalent after the revolution, was such as to lead to a simplicity and uniformity of practice, which were turned to great advantage by the aspiring ambition of the founder of American medicine, in the for-

mation of his popular doctrines. With the great changes which the numbers, habits, and relations of our people have undergone ; with the unparalleled increase of the members of the profession, and the extended and improved facilities for the acquisition of knowledge, there has been produced a correspondent modification in the hue and tone of medical opinions and practice, resulting in the independent attitude to which we have alluded. No circumstance would serve to show the triumphant enfranchisement of the medical mind, more than the utter disrepute, and even unpardonable neglect, which now attends the once attractive theories of Rush himself, in the identical school which was indebted for its rise, and still owes even its present supremacy, to the overwhelming force of his character. That school has adopted the physiological doctrines, but it stands a solitary exception among its numerous sister institutions scattered throughout the country. While we are free to express our unmingled regrets at the adoption of so exclusive, and as it appears to us, unstable an hypothesis, by an institution which must, of necessity, exercise a wide influence over the destinies of our profession, we shall not condescend to visit it with an unbecoming and undignified ridicule ; much less shall we attempt to depreciate the undeniable merits of M. Broussais, or misrepresent his doctrines by witty epithets. We have elsewhere stated our objections to the gastro-enteritic doctrine at large,* and we have not yet seen aught to undermine their force. But were it only for the ingenuity with which it has been advanced, and the plausibility by which it has been defended, we should deem it worthy of attentive study. Its merits rest not here. Of the extensive accumulation of novel and instructive facts by which it is attempted to be enforced, we feel bound to say, that while they fail to establish the peculiar hypothesis which refers the seat of all fevers to the mucous membrane lining the stomach and small intestines, they nevertheless shed an unprecedented flood of light on the essential inflammation of these organs, and on the incidental pathology of fever itself.

We would for once express the wish, that many of those who sneer at the views of the French reformer, would take more pains than it is to be suspected they have as yet done, to become versed with his writings. They may rest assured, that although they will not, as we think, become converts to the doctrine, they will find themselves no losers by the labor.

* Notes to Gregory's *Practice of Physic*. N. Y. edition.

In a practical point of view, the physiological school has been eminently useful, by directing attention to the local treatment of a contingent symptom, which, it must be admitted, is both frequent in all fevers, and very much aggravates their violence.

Is it not the more frequent occurrence in late years of this accidental gastric irritation in fever,—for we cannot deem it essential,—which has given rise to, and favored the partial spread of M. Broussais' hypothesis?

It has also been serviceable by checking that indiscriminate ardor for the use of violent remedies on all occasions, which for a long time characterized the practice of physicians, particularly in Great Britain and in this country, and which still animates no inconsiderable a number of our professional brethren even in this city. To subdue any disease whatever, by mild means, or by reliance on the recuperative powers of nature, is, in the opinion of these ultra-agitators of the human system, the unpardonable sin. Rush contributed powerfully to create and maintain this party, by his denunciation of the Hippocratic method of treating diseases. Yet the maxim of the Coan is frequently an invaluable guide;—*nulla medicina, nonnunquam optima medicina*. Its application requires far more judgment and resolution than will qualify a practitioner to pursue the never-varied routine of lancet and mercury, and blisters and purgatives. To break through this succession of heroic agents, were a heresy; and yet how often do they engender the assumed necessity for their own employment. It has not seldom fallen to our lot to witness the fatal termination of cases even of acute inflammation, which, we will venture to assert, might have been saved, by a little less active interference with the salutary efforts of nature,—a little more economy of the vital strength. Excessive depletion, in diseases of children more especially, will not unfrequently develop symptoms stimulating congestion in the brain. Your ever-busy dispenser of medicine hesitates not in pronouncing them a metastasis, requiring similar active treatment with the disease already subdued; he has recourse to his lancet, and his leeches, and his calomel, and—his little patient dies! The late Dr. Good conferred much benefit on the profession, by his invaluable paper on affections of this nature; it deserves to be universally read. It is not intended by these remarks to advocate a blind and exclusive dependence on the *vis medicatrix naturæ*, but to inculcate the propriety of not losing sight of this auxiliary, always powerful, and in many cases, omnipotent. We have given credit to Broussais for this improvement,

or rather retrograde movement towards the favorite principles of some of the most illustrious masters of our art. It is Pinel, however, to whom the true merit belongs, of having zealously and ably vindicated the absolute necessity of the occasional employment of the expectant method of treating diseases. The profound treatise of this eminent author, entitled "*Nosographie Philosophique*," deserves to be made known to the profession in the United States. We shall take an early opportunity of presenting our readers with an analysis of its invaluable contents. We return to our authors.

Dr. Dewees inclines strongly to the Broussaian doctrines ; in some passages at the commencement of his work, he is even an ultra in their favor. But he retracts subsequently, and we will do him the justice to say, that the treatment he recommends is by no means guided by exclusive local views of fever, but have reference, and very properly too, to the state of the system at large. Dr. D. is in error, however, when he asserts, that a settled unanimity of belief prevails as to the constant presence of gastro-enteritis in fever. No fact has more widely and incontestibly been refuted, and the success of his own practice very much assists this refutation. Nay, candor compels him to condemn the author of the physiological school for pushing "his practical precepts beyond what is warranted by general experience. Thus he confines his treatment so exclusively to the reduction of the inflammation of the stomach by leeches and absolute starvation, that he loses sight, in his plan of cure, of the necessity of removing the extraneous substances which almost always occupy this organ, or the bowels, and which cannot fail by their presence, in our opinion, to become irritants, and every way able to perpetuate, if not to augment, the existing evil." It appears to us, that while Dr. Dewees is undoubtedly correct as to the fact, Broussais has the advantage of him for consistency, so far as his theory goes. If the physiological doctrine were founded on truth, there cannot be a question that attention to the local phlegmasia, would suffice to resolve the fever. *Sublata causa tollitur morbus*. The extraneous materials would be the products, not of a general disease of the whole system, but of the organic affection, and this once subdued, the natural energies of the digestive organs would suffice to remove them. Besides, who ever thought of administering purgatives in simple inflammation of the stomach, unaccompanied by such fevers as are supposed by this hypothesis to be invariably dependent on it alone ?

Dr. Eberle is an undeviating disciple of the eclectic school ; he altogether rejects the gastric origin of fever. Instead, however, of quoting his objections to it, which are not, by any

means, novel, we shall insert from another source what we deem some conclusive arguments against the Broussaian theory ; they are from the masterly pen of Abercrombie, and occur in his excellent pathological researches on the diseases of the digestive organs ; he is speaking of the disease of mucous membranes, and of the views of French writers.

“ In the investigations of the writers whom I now refer to, inflammation of the gastro-intestinal membrane, in an acute, sub-acute, or chronic form, is considered as being the origin of a great variety of diseases, particularly of almost every modification of dyspeptic affections, and all the varieties of fever. This system has not been received to any extent by the pathologists of this country ; and the grounds on which we differ from the eminent persons by whom it is supported, are chiefly three, namely, in regard to the facts,—their generalization,—and their causation.

“ 1. We do not recognise the facts upon which this system is founded ; because, according to it, many appearances are considered as indicating inflammation of the gastro-intestinal membrane, which we believe to take place after death, or immediately before it, and consequently are not to be considered as indicating disease. The nature of these appearances has already been mentioned, as well as the grounds on which we conclude that they are not worthy of confidence in this pathological inquiry. They consist of livid, red, or brown spots on the membrane, portions showing a violet or rose color, enlarged vessels, varicose veins, slight extravasations of blood under the membrane, and various other appearances, consisting of mere change of color, without any change in the organization of the part. Such appearances we now consider as fully ascertained to occur, in a great extent, in the bodies of persons who have died from execution or drowning, or from diseases not at all connected with the bowels ; and, consequently, that they cannot be considered as indicating a morbid condition of the mucous membrane.

“ 2. While we set aside, as foreign to the inquiry, a large proportion of the appearances described by these writers, we admit that others are indicative of real and important disease ; but we do not admit that these are uniform appearances in the diseases to which they refer. In a pathological point of view, for example, it is an important fact, that, in a considerable proportion of the fatal cases of fever, inflammation or ulceration is found in the gastro-intestinal membrane ; but we are far from admitting that it is met with in all these cases, which we should consider as essential to the doctrine of inflammation of the gastro-intestinal membrane being considered as the cause of fever.

“ 3. But, even on the supposition that these appearances were met with in all the fatal cases of fever, the question still remains, whether they are the cause of fever, or the effects of it ; and upon

this head, a very slight view of the facts will show that they are decidedly in favor of the supposition of these appearances being the effects, rather than the cause of fever. This conclusion we must consider as resulting, in the first place, from the fact already mentioned, that these appearances are often wanting; and secondly, because that, in their degree, or the stage of their progress, they bear no relation to the period of the fever, but are often found existing, in their slightest or earliest stage, in cases which have proved fatal at a very advanced period, and with symptoms of the utmost malignity; while, on the other hand, they exist in a very high degree, and are apparently the immediate cause of death, in cases which have proved fatal at an early period, and in which the proper symptoms of the fever had been slight and moderate.

“On all these grounds, therefore, we think we are warranted in concluding, that the affections of the gastro-intestinal membrane, which are met with in connexion with continued fever, are to be considered either as incidental concomitants, or as effects of the fever,—and cannot be regarded as its cause.

“These observations apply to the general appearances of the mucous membrane, to which so much importance has been attached by the pathologists of the continent; but some of the later writers have taken rather a new view of the subject. Under the name of dothinerite, they describe an affection which they conceive to depend upon active inflammation of the mucous glands of Peyer, and the follicles of Brunner. Their observations on this subject are worthy of attention as far as they consist of facts; but we suspend our confidence when we are farther informed, that the dothinerite is synonymous with the malignant fever of Sydenham, the hospital fever of Pringle, the typhus of Cullen, the putrid and petechial fever of other writers; in short, that every variety of fever, continued, intermittent, and remittent, arises from the inflammation of these follicles.

“As the symptoms of the dothinerite, they of course describe all the phenomena of continued and malignant fever, accompanied by a loose state of the bowels, and some degree of tenderness of the abdomen. The morbid conditions which they describe in these cases are, that in the early stages, the crypts or follicles appear rather more prominent than natural, and slightly injected, especially in the upper part of the canal; that, as the disease advances, they become more prominent, with softening of the mucous membrane which covers and surrounds them; and that, at a period still more advanced, this passes into ulceration.

“These observations are worthy of attention as facts; but when, in describing the symptoms of the dothinerite, all the usual symptoms of fever are detailed, with the addition of diarrhœa, and tenderness of the abdomen, the statement merely amounts to the fact, with which we are well acquainted, that, when in a fatal case of fever, there has been tenderness of the abdomen with diarrhœa, we may expect to find disease of the mucous membrane, or its fol-

licles. When we are farther told, that this takes place in every case of fever, and, consequently, that fever in all its modifications depends upon the inflammation of these follicles, we hesitate alike about the doctrine, and the generalization on which it is founded. This we do upon two grounds, namely, that in many fatal cases of fever, we cannot detect any disease of these follicles; and secondly, that when we do find such disease, the degree of it, or the stage of its progress, bears no relation to the period of the fever, or the intensity of its symptoms. This will appear from a slight examination of the cases related even by the writers referred to. Thus, in a case by Landini, which was drawn out to the 21st day, with every symptom of the most severe form of typhus, the only morbid appearances found in the mucous membrane were,—in some places a gray color; the crypts of Brunner little developed; those of Peyer slightly enlarged, and a few of them presenting traces of erosion. In another patient, who lay with every bad symptom for twenty-eight days, the glands of Peyer offered some points which were red, and denuded of their mucous membrane; those of Brunner were almost all in their natural state, except a few which showed ulcerations, and a very small number which offered traces of melanism; the mucous membrane of the great intestine was of a pale rose color, and appear thickened. We must suspend our confidence, when we find a system, which professes to account for the whole phenomena of fever, founded upon such inadequate appearances as these. The fair conclusions, from a view of the whole subject, appear to be, that in certain cases of continued fever, the gastro-intestinal membrane, or its follicles, become inflamed, pustular, or ulcerated; and that, as facts in the history of fever, these are worthy of much attention, but certainly do not warrant, in the slightest degree, any general deduction in regard to its nature or cause.”

The views entertained by Dr. Eberle of the nature of fever, are contained in the following propositions:

“1. Fever consists in an *irritated* excitement of the *sanguiferous* system; and is essentially connected with a deranged state of the vital properties of this system.

“2. This irritated excitement may be the result of irritating causes, acting immediately on the internal surface of the sanguiferous system, or of irritating impressions, conveyed sympathetically to this system from a primary focus of irritation.”

The first of these positions is maintained by reference to the morbid action of the heart and arteries; the altered state of the secretions; the immediate products of vascular action; the elevated temperature of the body; the morbid changes which are detected on post mortem examination.

The following extract will more clearly elicit this doctrine.

"The vascular excitement which constitutes fever, is an *irritated* condition, and not a mere *increased* action, of the heart and arteries. There exists a wide difference between *irritated* and merely *increased* excitement. The former is the result of stimuli acting either directly or indirectly through the medium of the nervous system, upon a part, or system, whose vital powers are in a *deranged* or morbid state. This result is not simply a *greater degree* of the natural or healthy action, but an action or excitement which is essentially morbid or distinct in quality from healthy action. The latter, namely, mere *increased* excitement, is the result of stimuli acting either directly or indirectly on an organ or system, whose vital properties are in a healthy or underanged condition. Thus, a few ounces of alcohol will cause a high degree of arterial action in an individual not accustomed to this stimulus. The same effect will be produced by any sudden and violent bodily exertions, as running, or rapid walking. Here, then, there will be *increased* action of the heart and arteries, and an augmented state of the animal temperature, but fever, notwithstanding, will not be present; because the vital properties remain in a natural condition, in consequence of which, the organs thus inordinately excited, will return to their regular grade of healthy action, as soon as the exciting cause has expended its force. As, however, all excessive action tends to weaken, and finally, to derange, the vital properties of the over-excited part, so, when these stimuli are very protracted in their influence, they at last derange these properties, and fever is the immediate result. Fever is, therefore, essentially connected with an altered or morbid condition of the organic sensibility and irritability of the heart, arteries, and capillary system; for, without such a condition, all irritants or stimuli can produce only *increased*, but no *morbid* action in the capillary and general sanguiferous system. So long as the vital properties retain their healthy condition, every excitation can only produce a greater degree of normal action;—the various secretions can only be augmented, but not depraved, or morbidly diminished. So soon, however, as these properties have undergone a change from their natural state, every stimulus, whether natural or morbid, must necessarily excite a morbid action. Hence, it may be concluded, that every cause which produces fever, in whatever way its influence may be conveyed to the heart and arteries, must necessarily derange their vital properties, either directly or indirectly, before that general *irritated* vascular action, which constitutes fever, can be established."

Many readers, who may be inclined to coincide with the learned author in his general opinions, will yet object to the term irritation, as by him applied to disease, and more especially to fever. It has been very justly observed, that the word has been so long employed to denote healthy action, say in the muscles, that much confusion must necessarily arise from this

extension of its signification, so as to include a peculiar morbid condition. The difficulty is not a little increased by the ignorance, which still subsists of the exact nature of this diseased action, from which it follows that it is applied in many different senses by authors. Thus, Travers uses it in a very extended sense, Butler applies it as an epithet to denote a peculiar fever, and Hosack and Eberle apply it to fever in general. Fully aware of the force of these objections, we yet do not well know how we are to get rid of the application of the term to disease. All we would contend for is this, that there is a peculiar state of disease, distinct from simple excitement, and which constitutes fever, and probably exists in other diseases, more especially those of the nervous system, such as whooping cough, and some others. What it is, we are unable, in the present state of pathological knowledge, to assert. That it does occur, and is characterized by marks which distinguish it exclusively, and which separate it widely from inflammation, every practical man, not biassed by subservience to hypothesis, must candidly acknowledge. The symptoms which denote its presence, the causes which develope it, and more especially the various treatment necessary to subdue and remove it, are peculiar to itself, and by no means identified with antiphlogistic remedies. Another term than irritation to express it, is highly desirable both for simple convenience, and for scientific precision : such a one will suggest itself, when its nature and essence shall be better unfolded and understood.

To prove his second proposition, Dr. Eberle goes into an examination of the disputed question, whether substances can act directly on the internal surface of the heart and arteries, or in other words, whether the blood does ever prove the direct medium of conveying morbid agents. The affirmative is clearly established in our opinion.

“That foreign substances are readily taken up by the absorbents and veins, and conveyed into the circulation in an unassimilated state, is now no longer a subject of doubt or dispute. It appears to me highly probable, that *miasmatic* agents act upon the animal system, in part at least, by being admitted through the lungs, into the current of the circulation. Some contend that these aerial morbid causes act primarily on the stomach. It is asserted, that the miasm, becoming entangled in the saliva, and swallowed with this fluid into the stomach, establishes a primary morbid impression in its delicate mucous membrane. It is alleged, in confirmation of this opinion, that the stomach, possessing a very extensive circle of sympathetic relations, and being highly sensitive to impressions, is peculiarly calculated to become the primary focus of morbid excite-

ment from external morbid causes. It is affirmed, moreover, that the initial symptoms of fever point out the primary influence of the febrific cause on the stomach. The depressed or abolished appetite, the nausea and vomiting, and the peculiar sense of uneasiness in the epigastrium, are considered as affording strong evidence of the correctness of this opinion. It is asserted, finally, that the lungs are endowed with an inferior degree of sensibility, and that their sympathetic relations are by no means very extensive, and that, therefore, they are but imperfectly adapted for receiving and propagating morbid impressions from external causes.

“In reply to these arguments, it must be observed, that it does not seem probable, that a sufficient quantity of miasmata could gain admission into the stomach to produce disease. As to the evidence drawn from the character of the premonitory symptoms, it cannot afford any available support to this doctrine. A severe wound, or contusion, will give rise to nausea, vomiting, and immediate loss of appetite. Such phenomena only show that the stomach readily sympathizes with impressions made on every part of the body, when of sufficient degree of intensity. With regard to the alleged insensibility of the lungs, or its limited sphere of sympathy, we might admit its justness, without being reduced to the necessity of adopting the opinion that miasmata act primarily on the stomach. It is not presumed that ærial morbid agents act simply on the nervous extremities of the respiratory passages, and thus give rise to a chain of sympathetic morbid actions. It is contended, that agents of this kind pass through the lungs into the current of the circulation, or effect certain morbid alterations of the blood, in consequence of which, the lining membrane of the heart, arteries, and capillary system, is irritated, and the vascular system thrown into a state of febrile excitement. That agents of this kind are absorbed into the circulation, and act upon the system through the medium of the blood, may be inferred from a number of familiar facts in relation to the inhalation of odoriferous effluvia. The inhalation of the fumes of turpentine, of garlic, and of various other substances, of a similar character, is speedily followed by the manifestation of these odours in the urine. How are we to account for the extraordinary effects which arise from the inhalation of nitrous oxyd, and of the vapour of sulphuric ether? It does not seem probable that these effects are produced by the mere impressions of these causes on the pulmonary nerves; for when these substances are taken into the stomach, the nerves of which are so highly sensitive, no such consequences ensue.

“These facts go to show, that substances capable of affecting the animal economy, will, when admitted into the lungs in a gaseous form, promptly and powerfully exert their peculiar influence upon the system. There are no good grounds, therefore, for denying that miasmata and contagious effluvia, may produce their deleterious effects through the same avenue. The bronchial tubes and cells, expose a very extensive surface to the impressions or intromission

of such agents, a circumstance, which, it may be presumed, is well calculated to favor their morbid influence on the system. The experiments of Magendie, in relation to the effects of putrid effluvia, afford, moreover, strong evidence in favor of this opinion. On exposing animals to the inhalation of putrid effluvia, some were found to suffer no apparent injury, whilst others became rapidly emaciated, and died, at different periods, within twenty days. When, however, the putrid substances from which these effluvia emanated, were received into the stomach, no inconveniences were experienced by the animals.* To these facts we may add, that small-pox virus, when swallowed into the stomach, will not infect the system, whereas, every one knows, how readily the disease is contracted by inhaling the effluvia which arise from persons laboring under this disease.

“It is, therefore, evident that æriform morbid agents act upon the system through the medium of the lungs, and it is extremely probable, that they pass into the current of the circulation, and act immediately on the internal surface of the heart and blood-vessels, and perhaps primarily on some portion of the capillary system.”

It is not contended, however, that the blood is the exclusive medium by which these foreign impressions act; “any part which exposes a sensitive surface to such causes, may enable them to operate injuriously on the system.” These distant parts when *irritated*, may sympathetically excite fever. Inflammation will sometimes produce it, but more generally the primary focus consists in functional derangement, or irritation. After fever is once formed, inflammation is very apt to supervene, and it is this frequent supervention of inflammation, which has led to the belief, that is always primary.

“Fever, perhaps, always commences by a local irritation. Even when it is the result of causes which act immediately on the internal surface of the vascular system, the irritation is probably at first confined to a comparatively small portion of this system—namely, the heart, or the capillaries of some particular organ or structure, according to the nature of the remote cause. Observation has taught us that almost every agent, whether medicinal or deleterious, has a tendency, in its ulterior operation, to affect particular organs or structures in preference to others. On whatever part of the system the impression is made, the excitement produced is chiefly conveyed to some particular organ or structure, according to the

* Journal de Physiologie, Janvier, 1823

peculiar character of the primary impression. Thus ergot, whether introduced into the stomach, or injected into the rectum, produces an excitement which is especially conveyed to the gravid uterus; and thus too, jalap, tartar emetic, and various other similar agents, will manifest their peculiar influence upon the alimentary canal, when introduced into the circulation. That this should be the case, might indeed be inferred from physiological principles, independent of the evidence of experience. That each organ or structure in the animal economy possesses a peculiar modification of the vital properties, may be considered as an established fact in physiology. In this physiological circumstance, then, we perceive the cause why different agents manifest peculiar tendencies to act on different parts of the system. It cannot be doubted, that when an impression is made on the system, it will be most felt by that structure, whose specific or peculiar vital properties are most in relation with it. When an impression is made on the nervous extremities of any part of the body, the excitement which it produces is conveyed to the brain, and reflected thence, throughout the whole nervous system. But as the various parts of the body are endowed with peculiar modifications of sensibility, there will be some that are insensible, whilst others are more or less sensible to the reflected impression, and consequently there will be some parts in which a new excitement will be produced, by the reflected excitement, and others in which no effect will be manifested. Thus, if tartar emetic be kept in contact with the external region of the stomach, the impression which it causes will be conveyed to the brain, which in its turn will reflect the impression throughout the whole nervous system, but as the stomach alone is endowed with a mode of feeling capable of receiving this peculiar impression, it will be in this organ that its effects will be conspicuous.

“Let us suppose, then, that an agent capable of producing fever makes its primary impression upon the nerves of the stomach, or of the skin, or of any other part of the body. This impression will then be conveyed to the sensorium commune, whence it will be reflected throughout the whole nervous system. As the different organs of the body are, however, endowed each with its own, or peculiar modification of sensibility, there must be some that are insusceptible, whilst others are peculiarly susceptible of receiving and responding to the reflected morbid impression; and these latter, it is reasonable to presume, will be irritated and functionally deranged. From the organs, or organ thus primarily irritated, the morbid excitement passes from organ to organ, or tissue to tissue, according to their various degrees of sympathy with the part primarily affected and with each other, until the whole system is involved in morbid excitement.

“That in fevers which are the result of a series of sympathetic actions, the primary irritation is almost universally established in the mucous membrane of the alimentary canal, as is asserted by Broussais, appears to me as far from the truth, as that all fevers are

purely symptomatic. Almost every organ or structure of the body may, I conceive, be the first to suffer irritation, and consequent functional derangement, from external morbid impressions. The lungs, or the liver, or the brain, or the skin, &c. may sometimes receive the reflected impressions of such causes, and become the focus whence the febrile actions emanate. Nor does it seem probable, that the irritation thus produced by a reflected excitement from the brain, amounts often to the grade of inflammation. Deranged or irritated action of an organ, thus produced, may be sufficient to establish a train of morbid excitement, which must ultimately terminate in febrile reaction. Thus, a draught of cold water, while the body is in a state of free perspiration, may in its ultimate consequences establish fever. In this case, the impressions of the cold water on the nerves of the stomach, pass through the medium of the sensorium commune to the cutaneous capillaries. These are thereby thrown into a state of torpor or functional derangement, and, as it would seem, the sensibility of the subcutaneous nerves becomes altered, in consequence of which a sense of chilliness is experienced. These, then, are the first sympathetic phenomena of the remote or exciting cause; and from these morbid conditions others proceed, in regular sequence, until the fever is fully developed. Thus from the sudden torpor of the cutaneous exhalents, and diminished circulation in the external capillary system, three pathological conditions must necessarily arise, which tend especially to evolve febrile excitement. In the first place, a large portion of the recrementitious substances which are destined to be cast off by the skin, will be retained in the blood; secondly, the heart and large internal vessels will become greatly engorged with blood; and, thirdly, the action of the liver will be diminished, in consequence of its direct sympathy with the cutaneous exhalents.*

"A fever thus produced—namely, by a cause acting primarily on the stomach, as in the example just assumed, probably often becomes early connected with more or less inflammation of the mucous membrane of this organ. For, having in the first place sustained the injurious impressions of the cause, and consequently at once been brought into a state of morbid excitement and debility, it can hardly fail passing into a state of inflammation as soon as the general momentum of the circulation is considerably augmented by the development of the fever.

"It must be remembered, that inflammation consists not only in congestion of the inflamed capillaries, but also in an altered or morbid condition of their vital properties; and hence when an organ is already in a state of morbid irritation, inflammation will very readily ensue, when, by a general increased momentum of the

* "Vide Johnson on the Diseases of Tropical Climates. Of the correctness of his sentiments in relation to the influence of the cutaneo-hepatic sympathy, I entertain no doubt."

circulation, the blood is urged into the debilitated and morbid capillaries. It is on this account, that we so often find inflammation to supervene in the stomach and intestinal canal in fevers. The mucous membrane of these organs is so readily and so generally deranged in the commencement of fevers, that the increased momentum of the circulation which occurs as soon as fevers are developed, must very frequently cause more or less of inflammation in this delicate structure, in almost every variety of fever. These inflammations are nevertheless purely secondary, and can by no means be regarded as the cause of the febrile phenomena, although their influence in increasing the violence and duration of these phenomena cannot be doubted."

[*To be continued.*]

MEDICAL INTELLIGENCE.

ANATOMY AND PATHOLOGY.

1. *ON preserving Anatomical Preparations in Spirits.* By ALEXANDER WATSON, Esq., *Fellow of the Royal College of Surgeons. Edinburgh, &c.*—Now that museums of healthy and morbid anatomy are considered to be of so much importance, it is surprising that more attention is not given to the improvement of the mode of putting up preparations in spirits. This mode of preserving anatomical specimens is of great importance, as it is the most perfect, though it is, at the same time, by far the most troublesome and expensive. It becomes interesting, therefore, to inquire what is the best mode of securing preparations of this class from evaporation and decay.

As the “tying-up,” as it is called, of preparations in spirits, is generally left to be done by those who know very little about the matter, and care only so far as they are paid for their labor, they either cannot or will not improve upon an old, troublesome, and very inefficient mode of doing it. They, therefore, do not use any endeavor to discover the causes of its defects. In consequence of having experienced its defects, I some time ago endeavored to ascertain, *1st*, What were the chief causes of the evaporation of the spirits from preparations which had been put up in the most careful manner, by tying over the glass layers of bladder, sheet tin, and superadding coatings of varnish; *2dly*, To contrive a mode of putting up wet preparations, that would obviate the chief objections to the old methods. And, though my conclusions may not be altogether new, yet, as they may be interesting to those forming museums, I communicate them through the medium of your journal.

1. When an anatomical specimen is suspended in a preparation glass, according to the present ordinary mode, the threads suspending it are necessarily brought over the edges of the glass, moistened bladder is tied over it, then a covering of sheet tin, and another covering of bladder, which, when dry, is varnished over. Now, though the glass is tied up perfectly full and free from globules of air, at the end of a year or two, and often much sooner, the spirits

have so much evaporated, that the preparation requires to be re-tied up. This is not only the source of much trouble, but delicate preparations are often much injured, or even altogether destroyed, in undergoing this operation.

The evaporation of the spirits, seems to take place chiefly from being exposed to considerable variations of temperature. After a preparation has been tied up, particularly in winter, or in a cool room, and then placed in a warm apartment, or exposed to the summer heat, a very considerable expansion of the spirits takes place. The force of this expansion causes the formation of some small crevice or external opening between the glass and its covering, very often by the side of the thread suspending the preparation. When such an external communication is once formed, the evaporation of the spirits goes on by the ordinary variations of temperature to which it is exposed, more or less quickly, according to the degree of these variations,—air is admitted when the temperature falls, and upon another increase of temperature, the fluid is wasted by the air being expelled carrying the spirits along with it. This process, by repetition, goes on till the preparation is left in the glass quite dry.

When a preparation is tied up in summer, or in a warm apartment, and then exposed to a lower temperature, the change produced upon it at first is different, but not less destructive to it than that in the former case. When the contents of the bottle contract by the lower temperature, the covering is forced down into it by the pressure of the atmosphere. By this forcible depression of the upper part of the covering, its sides are drawn upwards, and some chink or crevice is formed, by which air is admitted. After this has taken place, the waste of the spirits goes on, as in the preceding case, by every increase of temperature.

2. In order to obviate these inconveniences, I thought of the following mode of putting up preparations. I obtained preparation-bottles, with glass stoppers accurately ground to them. When these are intended to contain small or round preparations they may be made somewhat globular, a form which is both more ornamental, and contains less spirits than any other; consequently, there will be less expansion, and the mouth of the bottle being narrowed, exposes less surface to evaporation; besides, the globular form magnifies the preparation very considerably, which in many cases is a great advantage. For other preparations, bottles of other forms will of course be more suitable,—attention always being paid to having the mouth of the bottle of as small dimensions as just suffices to admit the preparation. Thus a membranous preparation of three or four inches square, having its upper part attached to a piece of glass rod, may be introduced into a bottle sufficient for its expansion, at an aperture of about half an inch in diameter, the suspending thread being attached to the glass rod. Solid preparations require the mouth of the bottle to be nearly of the

same width as its interior. The bottles can, of course, be made of any depth; they could also be made flat-sided with a circular mouth. The hollow form of the stoppers of these bottles possesses several essential advantages. *1st*, It admits of a small piece of whalebone being placed across its interior, to which the preparation is suspended, by which the necessity of threads hanging over the edges of the bottle is obviated. *2d*, It admits of a portion of the air contained in it being expelled by the application of a moderate heat before being put on. This is of very considerable importance. When the stopper is thus firmly placed upon the bottle, being perfectly air-tight, it is forcibly retained in its place when cooled by the pressure of the atmosphere; and the partial vacuum within it, admits of the expansion of the spirits to a considerable extent before the stopper could be forced up, or any of the spirits forced out. *3d*, An accurately ground glass stopper forms a very easy and expeditious mode of closing preparation bottles, thereby saving manual labour. *4th*, It looks much neater, and more elegant in a museum, than the tying up with bladders, &c. *5th*, When evaporation does take place, the re-filling of the bottle only requires the stopper to be raised a little with one hand, while some spirits are poured in with the other; thus saving all trouble, expense, and risk of injuring the preparation, necessarily incurred by the old and filthy bladder mode.

I have shortly described the mode which I have adopted, and would recommend others to adopt, in the making of wet anatomical preparations. But, before concluding, I may notice two objections, which may be started to this method. *1st*, The greater expense of bottles with ground stoppers than those now used. From experience, I can assert that, when the preparation-glasses, bladders, sheet-tin, twine, varnish, and manual labor, are taken into account, the adoption of stoppered bottles will be found a considerable saving, even without taking into account the expense and trouble of re-filling, which so soon becomes necessary, and which, if considered, would prove the new method to be a positive saving, independently of its other advantages. *2d*, The unfitness of this method for preparations of a large size. There is no doubt that for very large preparations, or those of a peculiar shape, such bottles could not be adopted. But I know that stoppers can be accurately ground to bottles, whose mouths are four inches in diameter. I will therefore venture to say, that about three fourths of the preparations of a museum might be put in bottles and made in this manner.

Another circumstance of great importance in preventing evaporation from preparations, besides those already mentioned, is to use spirits as weak as is consistent with the preservation of the part. When the part has been properly macerated and prepared by repeated changes of water and spirits, a much weaker spirit than is commonly used is not only sufficient, but is in reality better for preserving it, by being less subject to evaporation. The stopper should

also be rubbed over with a little lard before being inserted into the bottle, and melted beeswax afterwards poured round it.—*Ed. Med. and Surg. Journal, for April, 1831.*

2. *Obliteration of the Vagina, by the injection of Sulphuric Acid, to produce Abortion.—Cæsarian Operation.—Death.*—This singular case is detailed in a letter addressed to M. Guerin. It occurred in a married woman, the mother of four children, and pregnant of a fifth. At the commencement of her pregnancy, she was induced by a female neighbor, to inject sulphuric acid into her vagina, as an extremely easy mode of inducing premature labor; dreadful inflammation set in, the parts swelled, great general disturbance ensued, and finally the vagina was so effectually obliterated, that she could no longer endure the embraces of her husband; nevertheless, she kept the circumstance a secret till the full term of her gestation was expired. The medical men, on examination, found that a kind of irregular band surrounded and obstructed the vagina, beyond which, and on the brim of the pelvis, the head of the infant was distinctly felt, pressed forward by the uterine contractions. It was resolved to make an incision through the dense membrane, but when this was done, it was found it had adhered to the bladder, which the incision had completely divided. The delivery was not at all facilitated, and the attendants felt themselves compelled to perform the Cæsarian section. The infant was extracted, dead, apparently for some time, and the mother immediately expired.

Absence of the Gall-Bladder. (*Lancet Francaise.*)—M. Amussat, at the same sitting, communicated the description of a dissection he had recently made of a young female, in whom the gall-bladder was altogether deficient.—*London Lancet, April, 1831.*

3. *On the state of the Liver, in many cases of Icterus.* By M. CORBIN.—Icterus is a disease which is very common, but the causes of the yellow suffusion on the skin, are often very obscure. When evident symptoms of gall-stones do not exist, we have nothing but conjecture as to the change in the regular current of the bile. It may be viscid bile plugging up the ducts—or tumors pressing on them—or inflammation of the duodenum—or other causes, of which we are ignorant. The disease is not often fatal, and therefore dissection has not thrown so much light on the pathology of the complaint, as on that of some others. It has even been discussed in a “*concourse*” at Paris, whether the liver itself be always the seat of the cause which induces icterus. We know, indeed, that jaundice will suddenly arise from strong emotions of the mind; but surely this must be from derangement of the biliary apparatus. But to come to facts.

Out of 1800 patients in the wards of La Charité, between the 1st of January, 1828, and the first of April, 1830, 22 were cases of icterus. From this number were excluded all cases of fugitive or slight tinges of yellow on the skin, from temporary bilious affections or indigestion. The cases were all regular icterus. Ten of them were females, and twelve males. Fifteen were cured, and seven died—a very great proportion in the mortality, as compared with experience in this country. Some of these seven became complicated with other severe affections before death—others presented nothing but the jaundice. The following is a concise expose of these seven cases.

1. A young man, 22 years of age, died on the 22d August, 1828, in consequence of small-pox, which had come on a short time after the commencement of intense jaundice. The liver was of a yellower color than usual, and presented brown granulations interspersed in its substance. The biliary ducts were quite free from obstruction.

Case 2. An old man of 64, entered the wards with jaundice on the 13th February, 1830, and died of peripneumony of the right lung on the 7th of March. The jaundice had nearly disappeared before death. The liver was of a pale yellow color; but the biliary ducts were free from obstruction.

Case 3. A female was affected with encysted ovarian dropsy of both sides for six years. She was seized with icterus ten days before her death, and the complaint had become more and more intense up to that time. The liver had been compressed by the ovarian cyst, and was softer than natural. The organ was pale yellow; but no obstruction could be detected in the ducts.

Case 4. An unmarried female, aged 30 years, had been twice in La Charité for liver affection, and ultimately died there on the 1st of May, 1829. During life, the liver could be felt projecting below the ribs, and appeared tuberculated to the touch. There was ascites, and for four months before death decided jaundice—slight at first, but gradually and regularly becoming more intense.

On dissection, the liver was found enlarged, lobulated, interspersed with round bodies of encephaloid substance, and gorged with bile. Yet the biliary conduits were free from obstruction.

Case 5. A man, 63 years of age, entered the hospital on the 27th of April, 1828, in a state of extreme emaciation and debility. He had cough, and other symptoms of pulmonary affection; but he complained chiefly of pain in the right hypochondrium, which, he said, was of long standing. The liver appeared to be considerably enlarged. He was intensely jaundiced.

On dissection, the liver was found to be of great size, and full of tubercles, some of them softened down, and containing a liquid, or soft encephaloid substance. The gall-bladder was enormously distended with green bile. The biliary ducts were entirely free from obstruction.

Case 6. A man, 65 years of age, entered the hospital on the

15th November, 1829, with intense jaundice. He was in such a state of prostration, that little information could be elicited from him. It was ascertained, however, that the jaundice was of fifteen days standing. He died three days afterwards.

Dissection. There was some yellow serum in the cavity of the abdomen. There was redness, but no ulceration, in the mucous membrane of the stomach and bowels. The liver rose very high in the right side of the chest, without any apparent cause. It was larger than natural. It was full of tubercles of various sizes, consistencies, and colors. The gall-bladder was distended with bile—but the biliary ducts were pervious, and quite free from obstruction.

Case 7. Louis de Moiser, aged 74 years, (formerly Counsellor of Embassy,) entered La Charité on the 24th February, 1828, his whole surface of a beautiful yellow color—*belle couleur jaune*. This had been of ten days duration. He had lost his appetite, was costive, and extremely weak. The urine was green—the liver appeared enlarged. Leeches were applied, and some medicines were prescribed, which appeared to be of use; but on the 9th of March a diarrhœa occurred and continued for some days—then ceased. After this the legs became œdematous—ascites supervened—and on the 28th of the same month he died.

Dissection. We shall pass over the minute details of pathological appearances unconnected with the present subject. The duodenum was united with the liver, or rather with a cancerous mass appertaining to the liver. “Le duodenum fait corps avec le foie, ou plutôt avec une masse cancéreuse qui tient au foie.” This mass was the size of one’s fist. The nature of it is somewhat obscurely described. It included part of the pancreas, the biliary ducts, the cervix of the gall-bladder, and a portion of the concave surface of the liver. The biliary ducts were annihilated—or, at all events, totally impervious. The gall-bladder was converted into a solid mass, somewhat resembling the substance of the cancerous tumor above mentioned. In its centre was found a small quantity of inspissated bile. The liver itself was studded with encephaloid tubercles. From each incision made into its substance, a quantity of aqueous bile issued forth.—*Medico-Chirurgical Review, April, 1831.*

4. *Pathological appearances presented in the bodies of the insane dead.*—1. *Case of Cheerful Monomania.* The dura mater much injected, and adhering in many places to the pia mater—the latter softened—the brain pale, and rather softer than natural—cerebral convolutions effaced—right ventricle full of water—cerebellum and spinal marrow sound—lungs disorganized—stomach and intestines livid, with gangrenous spots—liver softened.

2. *Melancholy Monomania, with tendency to Suicide.* Membranes of the brain gorged with blood—no other unusual appearance in the head or chest—small intestines inflamed, as was the whole mucous

membrane of the digestive tube, from the mouth downwards—many apthæ in this track—liver enlarged and indurated—biliary concretions in the gall-bladder—spleen enlarged and indurated.

3. *Mania with Chorea.* Effusion under the arachnoid—cerebral substance hard and much injected—sanguineous effusion into the spinal canal, with traces of inflammation along the spinal marrow—all the other organs sound.

4. *Mania which terminated in Idiocy.* Some points of gangrenous aspect in the small intestines—brain very much softened, with much serum in the ventricles—nothing unusual in the other organs.

5. *Suicidal Mania.* Meninges and cerebral substance highly injected—heart large—traces of phlogosis in the digestive tube, especially in the duodenum and jejunum, whose parietes were thickened.

6. *Mania with Pride.* Meninges thickened and injected, having the appearance of parchment—strong adhesions between the two hemispheres—brain itself much injected—intestinal tube slightly inflamed.

7. *General Mania.* Much effusion between the membranes of the brain—pia mater inflamed, even to suppuration—cerebellum sound, as were the thoracic and abdominal viscera.

8. *Melancholia.* Considerable inflammation in the small intestines—cerebral meninges injected—the other organs sound.—*Ib.*

SURGERY.

5. *Interesting case of Lithotomy.*—John Wilkinson, art. 19, by occupation a chair-maker, was admitted by Mr. Green, February 3d, 1831, from High Wycomb, Buckinghamshire. About six years ago, we are informed, he had some symptoms of stone in the bladder, such as pain in the region of this viscus and in the penis, and the passage of blood with his urine; and from these he has not been free during this period, although they have been productive of little or no uneasiness up to the last six weeks. A greater degree of pain having lately come on without any assignable cause, he was sounded by a surgeon in the country, and a calculus detected, a fortnight since. The patient says, that on Christmas night, he was first attacked with severe pain, which has since recurred at short intervals and become more intense. His urine is clear, and he is devoid of pain in the loins; such did exist three or four years back. At night his rest is disturbed, he being often obliged to make water eight or ten times during the period he is in bed; but his general health is not affected, the pulse being seventy, and the tongue clean. There is slight constipation of the bowels. He has been addicted to drinking rather in excess, and the face is thickly covered with

black pimples the complexion being dingy and unpleasant to the sight, and of an unusual leaden hue.

Feb. 9. Was sounded to-day by Mr. Green, and a calculus found, situated over the vesical extremity of the urethra, so that it was instantly struck by the instrument. It appeared to Mr. Green to be very rough, and probably of the mulberry kind. Patient's bowels are regulated by the house-medicine, and he makes no complaint other than what is referable to the above obvious source. He is free from cough and every other symptom of pulmonary disorder, and his urine is quite transparent, and slightly acidulous. The face is not, however, clearer from the black spots.

11th. The operation of lithotomy was this day performed with the instruments used by Mr. Green, viz., a knife, to make the incisions down to the staff, and a gorget, wherewith to cut into the bladder. When the calculus was grasped with the forceps, it was found to be of larger size than was anticipated, and its surface very irregular. Some attempts were made by the operator to remove it with the instrument, but this being found impracticable, the internal wound was dilated with a bistoury, after which the calculus was withdrawn by means of a larger pair of forceps. Rather profuse hæmorrhage occurred from the transverse artery of the perineum, which was pouring forth blood during the whole operation, and this lasted upwards of 20 minutes. The difficulty in the extraction, arose from the size and nearly spherical figure of the stone; and it was also increased by the unusually rough (or aculiate) surface of the latter, which we might say was studded with pointed excrescences of nearly a sixth of an inch in length.—*Ib.*

6. *New mode of Operating for Nævus.* By Dr. M. Hall.—This operation consists in the introduction of a couching-needle with cutting edges, at one point of the circumference of the nævus, close by the adjoining healthy skin. From this point the instrument is made to pass through the tumor in eight or ten different directions, so as to produce slight incisions through its textures, parallel with the skin, but not so as to pierce the tumor in any other part. The first point of puncture is to be made the *centre* of several rays of slight incisions effected by merely withdrawing, and again pushing forward the instrument, in the manner and in the various directions already mentioned. This plan was practised, under Dr. Hall's observation, by Mr. Heming, of Kentish-town, on a nævus somewhat larger than a shilling. A little pressure was applied over the tumor—there was no pain—no hæmorrhage. For several weeks, nothing appeared to have been effected by the operation, and it was concluded that the operation had failed. "What a short time did not effect, however, a longer period accomplished completely. Half a year after the operation, the tumor was found to have disappeared, and the color of the skin to be nearly natural."

As the operation was performed in only one instance, and, as a long time intervened between it and any sensible effect, we have some misgivings as to the "*post hoc, ergo propter hoc*," on this occasion. We once got into some discredit, by strenuously recommending an operation for a nævus situated on the head of a child; but which operation was resisted by the tender-hearted mother. About a year afterwards the mother brought the child to us, when, to our surprise, the nævus had entirely disappeared, *without any operation*. We do not mention this fact to throw any discredit on Dr. Hall's proposal; but only to show that *one instance* is but slender ground for drawing a conclusion, either in medicine or surgery.—*Id.*

7. *A case of Ruptured Intestine, with remarks on some effects of Contusions of the Abdomen.* By JOHN HART, M. R. I. A., &c. (*Dublin Hospital Reports*, vol. v.)—*Case.* July 12th, 1826. An hostler, aged 36 years, received a kick from a horse on the abdomen, at 11 o'clock, A. M., and was brought into Mercer's Hospital at six in the evening of the same day, complaining of excruciating pain over the whole abdomen, with constant vomiting. He was pale, anxious, pulse 140, lower extremities drawn up, abdomen flat and rigid, with extreme tenderness. He had been bled previous to admission, and some purgative medicine exhibited, which was thrown up by vomiting. He had made no water since the accident. A catheter drew off two pints. Leeches were applied to the abdomen, and an emollient enema exhibited. Loose stools were the consequence. The symptoms were not ameliorated, and the patient died at five o'clock on the following morning.

Dissection. "The peritoneum was suffused with numerous small red vessels, and coated over with a thin layer of fawn-colored lymph, which could be easily scraped off, and in which no red vessels were visible; the intestines and omentum were agglutinated to each other, and to the inner surface of the abdominal parietes, in several places, through the medium of this soft lymph; a quantity of serous fluid, tinged with bile, and mixed with the contents of the intestines, was found within the sac of the peritoneum; this was altogether free from any fetid odour. On examining the intestines, it was found that the effusion had taken place through a rupture in the upper portion of the jejunum, which divided this intestine half across; owing to the retraction of the coats of the intestine, this opening was of an oval form, and surrounded by a raised border, consisting of the everted mucous membrane.* The lymph was in greatest abundance, and the adhesions were most extensive in the

* "As described by Mr. Travers in his work on Injuries of the Intestines."

vicinity of this opening. There was a large dark-colored patch on the arch of the colon, produced by an ecchymosis between its coats; but this intestine was unbroken, although distended with feces, some of which were nearly solid, as if they had been retained there for some length of time.

Between the layers of the transverse meso-colon and behind the root of the mesentery, there was a large quantity of dark colored coagulated blood, amounting in quantity to about sixteen ounces. This blood had been shed from the smaller branches of the mesenteric vessels, as we ascertained, by a careful examination, that the aorta and all the large veins were uninjured."

Mr. Hart enters into a disquisition on rupture of intestine, without breach of the abdominal parietes, because such an occurrence has not been satisfactorily accounted for hitherto. To our minds there is no great stretch of intellect required upon such an occasion. Whatever portion of intestine are not in a state of collapse, are filled, more or less, with air, or other matters, liquid or solid. The parietes of the abdomen investing the intestines are elastic. Now, we can conceive no more difficulty in the occurrence of a rupture of one of the intestines, under the operation of external violence, than the breaking of a bottle of wine in a hamper that had fallen off a cart, or was kicked by a horse's hoof. We are not convinced that "this particular kind of injury almost invariably happens to the jejunum, where it is continuous with the duodenum," because our memory serves us with more than one instance when blows on the abdomen ruptured other portions of intestine. We do not, therefore, attach very much importance to the following explanation given by Mr. Hart.

"Some other cause than simple distention must, therefore, operate in pre-disposing a certain portion of intestine to suffer the injury in question. It occurs to me, that this may more justly be attributed to the circumstance of the intestine being, to a certain degree, fixed on some resisting surface, at the moment when it receives the impulse of the confusing force. Such is the condition of the upper portion of the jejunum, which at its commencement is fixed to the spine, and which, for some inches lower down, is confined to the vicinity of that part by the shortness of its mesentery. The absence of such contiguous resisting surface, would explain why it was that the arch of the colon, in the case here cited, escaped being torn, although the violence had acted on it with a degree of force sufficient to rupture the blood vessels between its coats, so as to produce extensive ecchymosis. Every part of the large intestine, however, is not so exempt from rupture produced from external violence, as are the arch of the colon, and the more moveable part of the small intestines; the cæcum, for instance, which is usually bound down by the peritoneum to the surface of the right iliac fossa, is occasionally burst by external violence. There is a case of this kind related by Mr. Speer, in the fourth volume of these Reports."

Some cases of rupture of the liver and spleen are alluded to by Mr. Hart, and also rupture of the urinary bladder. But on these we need not dwell. The following observations are extracted, on account of their practical tendency.

Contusion of the Abdominal Parietes. "A contusion of the parietes of the abdomen may sometimes produce a degree of suffering, which might lead the observer to suspect at first, that rupture of the intestines had occurred. The most remarkable case of this kind which I recollect to have witnessed, occurred in a private of the Enniskillen Dragoons, named Connor, whose horse fell and rolled over him at a review in the Phoenix Park on the 30th of July, 1821. When brought to the King's Infirmary, immediately after the accident, he was suffering great pain over the epigastrium, so considerable that he could not endure the slightest pressure; his breathing was anxious and hurried, but his pulse was not above 80, and full; he had no vomiting. He was much relieved by fomenting and leeching the abdomen, the use of an emollient enema, and rest for a few days, after which he speedily recovered, and returned to his duty.

The symptoms which follow a rupture of an intestine with extravasation of its contents, are of such a complexion as to render the diagnosis between this injury and those other effects of contusions of the abdomen which I have here noticed, a matter of great difficulty. Its occurrence is indicated by the following symptoms: sudden acute pain, mostly accompanied by fainting; the pain suffering no remission, but on the contrary, increasing in severity; vomiting sets in and continues, until the termination of the case; the abdomen is flat and rigid, and intolerant of pressure; the countenance becomes deadly pale, and anxious, and the features shrunk; the pulse is small, feeble, and increased in frequency to 120 and upwards. In every case of this injury which I have seen, there was retention of urine.* The patient generally dies within twenty-four or thirty-six hours after the accident; and on dissection, there is discovered a rupture of the upper portion of the small intestine, or of some portion of the large intestine where it is fixed; there is extravasation of the intestinal contents, and lymph is extensively effused on the surface of the peritoneum, which, in many places, forms adhesions between the contiguous surfaces of the intestines."

Our author, though he cannot propose any plan of treatment based on experience of its efficacy, suggests that purgation must

* "It is a curious fact, that retention of urine should follow rupture of the intestine, in other mammalia as well as man. Thus, in a Kangaroo which I have just dissected, and which animal died in consequence of ruptured intestine from an accident, the bladder was in a state of extended distention."

be improper, by not exciting the peristaltic action of the intestines, and thus increasing the effusion of their contents. Instead of purgatives, he would advise opiates, while local inflammation is to be counteracted by leeches or other sanguineous depletion, aided by counter-irritation. By these means, he imagines that sufficient time might be gained for the formation of adhesions around the wound of the intestine, by which the extravasated fluids might be circumscribed, and at length find their way along the intestine.

"Since the above was written, I have been informed that views respecting the treatment of this disease, somewhat similar to those I have arrived at, have also occurred to Dr. Graves and Dr. Stokes, who have communicated the following particulars respecting a case successfully treated on these principles in the Meath Hospital. A middle aged man was admitted on the 27th of June, 1830, apparently in the last stage of peritoneal inflammation. The disease was of three days' standing, had supervened suddenly, in a few days after hypercatharsis induced by a large dose of glauher salts, and followed by long continued exposure to cold. It was attended by several of the usual symptoms of peritonitis from ulcerative perforation of the intestine. The belly was swollen, and so exquisitely tender, that the slightest pressure made the patient utter screams. The countenance was hippocratic, and the patient tormented with constant hiccup. Coldness of the extremities had commenced, and the pulse was weak and slow. Before the hour of visit, leeches had been applied to the belly without relief, the patient was then ordered one grain of opium every hour.

The next day it was found that the symptoms were improved. *The patient had not experienced the slightest coma, headach, or delirium.* The same plan of treatment was persevered in, the daily dose of opium being gradually diminished, until the 7th of July, when the convalescence having been completely established, the remedy was omitted. During this time, diarrhœa set in for three or four days severely; this was treated by the application of a few leeches to the anus, and the use of anodyne enemata.

'The patient took in all one hundred and five grains of opium, (exclusive of that in the injections,) without ever experiencing any of the usual effects of this substance, when exhibited in large doses!'

Experienced practitioners are well aware that, in certain diseases, especially those accompanied by much pain, opium may be given to an amount that would destroy life, if given in health,—or in other kinds of diseases. Thus in tetanus, we have given tincture of opium in three drachm doses every four or five hours, without producing any more effects on the brain or nervous system than so much water! In such cases, the stupifying effects of opium appear to be expended on the pained and irritated parts, without being extended to the other parts of the living machine.—*ib.*

PRACTICE OF PHYSIC.

8. *Complete Suppression of Urine for seven weeks.*—We notice this case, as published in a late number of Hufeland's journal, for reasons which will appear in the sequel.

Case. Itzig, a boy, 12 years of age, and who had always enjoyed good health, was taken, in the latter days of December, with a kind of malaise, which lasted five or six days, and for which he took some purgative medicine, which acted also as an emetic. From this date, the urinary secretion ceased entirely, not one drop of urine being passed, although the boy drank freely of liquids. Once only he passed about a pint of urine, after taking some diuretic medicines, and then the secretion stopped. Dr. Hubenthal was then consulted, and prescribed various medicines during a space of nineteen days, without any success. At the end of seven weeks, viz. on the 20th of Feb., Dr. Ramm visited the patient, and found that no urine had passed for many weeks; that a natural motion of the bowels took place every second or third day; that there was no increase of perspiration, but the reverse; that the appetite was tolerable, and sleep sound. The boy in all other respects appeared healthy. There was no reason to suspect any deception on the part of the boy or his parents. On the 22d Feb. there was a consultation of several physicians. The abdomen was rather distended, as there had been no stool for some days. A catheter was introduced into the bladder, but not a drop of water flowed. Injections of castor oil, with oil of turpentine, were thrown up per anum, and turpentine frictions were applied over the loins, and bals. copaibæ was ordered internally. These remedies were commenced on the evening of the 22d, and on the 24th, a few drops of urine mingled with blood were passed. In a few hours more, a quart of water was discharged, and this was repeated every day afterwards.

Most people will be sceptical as to the truth of the above narrative; and we should have doubted its authenticity ourselves, had we not lately seen a case where some weeks passed without any urine being secreted, and where it was impossible that any deceit could be practised. The catheter was introduced almost every day, but nothing except a few drops of blood followed. There was no affection of the head all this time; but a tumor existed in the right side of the abdomen, very painful, and apparently of a malignant nature. We this day (6th Jan. 1831) examined the patient, and ascertained that not a drop of urine had passed for five weeks! Mr. Acret can attest the truth of this assertion, strange as it may appear.

Since the above was written, the tumor burst internally—a large quantity of fluid was discharged per anum—and the patient is recovering.—*Ib.*

9. *Intermittent Hemiplegia*.—Dr. Elliotson has put on record, in one of his clinical lectures, a case of this kind, which is the first he has ever witnessed. Our readers are aware that we have recorded several cases of this description on our pages. We insert the present case for several reasons.

“There was a case of disease of the nervous system presented of a curious character, the first of the kind I ever met with, intermittent palsy. I have read of it in authors, and you will find it mentioned by Cullen as *paralysis intermittens*. Now among all the patients I have ever seen, and these amount to between thirty and forty thousand, including those in various public establishments and private practice, I had never met with an instance of this description. It was a case of intermittent hemiplegia. The man was admitted into Jacob’s Ward some time ago, and I mentioned his admission at the time. I gave him no medicine, because I was desirous of seeing whether his account was true or not. I seldom give medicine in aguish or intermittent complaints, till some one in the hospital has witnessed the occurrence of the paroxysms. He staid here three weeks without having a paroxysm. He was, however, a very respectable man, and I did not doubt his account. He then went out of the hospital, enjoined by me to return if his disease re-appeared. One day when I came to the hospital, some time afterwards, I found him in the courts, and he said he had been seized with a paroxysm that morning, and he actually was then in a state of hemiplegia of the left side. I saw it myself. I made him walk, and he dragged his leg in a semi-circular way, as patients usually do when they are laboring under hemiplegia, and he could not raise his left arm. It began at ten o’clock, and this was the usual course of the disease. He had told me originally that the paroxysms came on at 10 o’clock in the morning, not every day, but every third or fourth day, and, with a single exception, never after a longer period than that; but on one occasion, there was an interval of sixteen days. He was 48 years of age, and had been subject to this affection for two years and a half; and the paroxysm would last from three to four hours. But although it only lasted that time, he was not perfectly clear from it the whole of the day. He never knew the paroxysms begin later than 11 o’clock, or earlier than 10; from 10 to 11 was the regular period, till a week before he had been admitted, when one attack came on at half past 10 in the evening—the usual hour, but in the evening instead of the morning. The affection was not more frequent then than when it first began. The man looked sickly, as if he had had ague, but still more as if he had suffered from a hot climate, and it appeared that he had been in the East and West Indies, and that he had had fever both at Bombay and Batavia. He had suffered from dysentery, and when he was in the hospital, he had diarrhœa. I do not doubt that this was the effect of malaria; that his hemiplegia was a form of ague. I will not quarrel about words,—you might say it was not ague, because unattended by

shivering, fever, or sweating ; but I have no doubt it was as much the effect of malaria as ague is ; it was merely a variety of the same affection of the system. Supposing this to be the case, and having witnessed a paroxysm myself, I now gave him the sulphate of quinine, and, as the disease was of long standing, I began with a good quantity,—five grains every six hours ; this medicine very soon put a stop to the complaint, but not till I had increased the dose to ten grains every six hours, so that he took forty grains in the twenty-four hours. This is the dose that is often required in quartan ague, and the present was a worse form of the disease than quartan, because it occurred on the third or fourth day, and the longer the interval between the attacks, the greater is the difficulty of curing the affection, which may be considered as so much the more of a chronic character. It is not a matter of wonder that that large quantity was required. He continued in the hospital from his first admission on the 13th of October till the 23d of December,—rather more than three months, without any other attack whatever, and his health became greatly improved. It is wrong to suppose that malaria does nothing more than produce these particular forms of intermittent disease ; it poisons the whole body, and many persons are destroyed by it who never had ague at all, so deadly is the poison. His health, however, regularly improved under the quinine ; he became strong, his countenance was better, and altogether he found that he had received very great benefit from it. However, on the 28th of the same month, five days after his presentation, he came to me, saying that he had had a slight attack, a very slight one, that morning, but still it was an attack, and it occurred rather later than usual, some little time after 11 o'clock. When I saw him, at about half past 1 o'clock, it was then nearly gone off. I increased the quantity of sulphate of quinine to fifteen grains every six hours, and if that be not sufficient, I shall give him more, as he is to come to me from time to time. I had a person in the hospital who was not cured of ague with less than a scruple every six hours, and therefore I shall not be surprised if that quantity be required in the case of this man ; but I have no doubt that eventually he will be perfectly cured, though he may need very large doses.

This is a very interesting case, proving that paralysis is not necessarily an organic affection ; that hemiplegia does not necessarily arise from effusion, or from compression of any kind, at least of an organic nature. If any compression do occur in this man, it can only be during the fit, for at other times he is perfectly well ; it is entirely, I presume, an affair of *function*, induced by a particular poison. I have at this moment in private practice a very curious case, in which disease has arisen from malaria ; it has occurred in a young gentleman about eleven years of age, who lives by the side of the Thames. He had diarrhoea at school, which was allowed to run on ; he was, however, taken home, and treated very properly by the gentleman who attended the family,

by leeches to the abdomen, and I believe a blister, and all went on very well. He had tenderness just on one side of the umbilicus; he was, however, seized all at once, at a certain hour of the evening, with violent irritation, severe itching, tingling, and redness at the leech-bites, some feverishness, just at the very part where all the leeches had been applied, and every leech-bite became red and swollen. His sufferings were extreme, but after lasting for a certain time, all these symptoms went away. At the same hour the following evening, the same thing occurred, the leech-bites became swelled and hot, and he fell into a state of general excitement, from, as it would appear, the itching and tingling. The medical gentleman immediately saw him, and thought the attack was of an aguish character, and, as the family lived in a low spot by the side of the Thames, he gave this lad twenty grains of sulphate of quinine, in divided doses, before the time of the next expected paroxysm. The attack came on the next evening, but at a later period than usual, showing that the remedy had produced an impression. It is common for the remedy not to stop the disease at once, but to cause the fits to be postponed. I, however, was sent for, and I told the family that I was quite satisfied that the youth was going on right; that the quinine was the only remedy, and that it must be persevered in at the same doses. The fits were very distressing; indeed, to the family, alarming, and we both agreed that it was better to go on with twenty grains in the twenty-four hours. The next day the paroxysms appeared later and more slightly, and then came on once in two or three days, and still more slightly; he presently became perfectly well. At the end of a month, he went out of doors, and was exposed to cold, and from his extreme anxiety to regain the time he had lost from school, for he was a fine boy, a paroxysm came on again, but rather mildly; the medicine was again had recourse to, and the immediate effect was a postponement and alleviation of the next paroxysm, and I have no doubt, that if he continue to take the remedy for some weeks, he will not have a relapse. These remedies will not cure the disease unless you give them for some time after the disease has appeared to cease. Sometimes it is necessary to give them for many weeks; sometimes it is necessary to do more than this—to remove the patient from the spot. Just as in syphilis, if a person get cured, and return to the same quarters, the mercury he has taken will, of course, not prevent him from again catching the disease; so a person may be cured of ague, but if he continue to live in the same unhealthy quarters, of course the poison may operate afresh upon him; and as in syphilis mercury must be taken for some time after the symptoms have all disappeared, so must quinine *after ague*.”

We have seen many cases where paralysis was evidently not the effect of organic disease, but of malaria. One, which we are not at liberty to mention by name, but which we lately saw with Dr. Paris, (who will confirm the truth of this statement,) is still

more remarkable than the case recorded by Dr. Elliotson. A young gentleman, the son of one of the most public characters in England, travelled, more enthusiastically than wisely, through Italy during the summer of 1830. The consequence was, a malaria fever, after which he lost the power of *all* the voluntary muscles of the body, from head to foot! In this deplorable condition he was conveyed from Venice to London, *like a corpse in perfect health*. All the functions went on regularly—intellectual and organic—but all animal power of motion and locomotion was lost. This general paralysis continued for some weeks after his arrival here; and Dr. Paris very judiciously abstained from violent remedies, such as strychnine, &c., trusting to the recuperative powers of nature. Motion gradually returned,—first in the upper, and afterwards in the lower extremities,—and we believe he is now walking about, and enjoying good health. Such accidents, though seldom on so remarkable a scale, are every year happening in Italy, and other malarious countries, though they are very imperfectly known to the profession of Great Britain.—*Ib.*

MIDWIFERY.

10. *Auscultation the only Unequivocal Evidence of Pregnancy.* By DR. FERGUSON, A.M. M.B., Dublin.*—Such is the rather equivocal title of a paper of some length in the Dublin Medical Transactions. We all know that the signs of pregnancy, though usually distinct, are occasionally doubtful, if not absolutely fallacious. There are few medical men of any practice, who have not been at one time or other deceived. The discovery of an infallible, or certain sign is confessedly a desideratum. Many of our readers are aware, no doubt, that Laennec alludes to the employment of the stethoscope in the detection of pregnancy, and some will probably smile on the occasion. The signs detected by auscultation are two; the “bruit placentaire,” and the pulsations of the foetal heart. They are seldom observed before the fifth month, and seldom fail to be recognised by an accurate observer after it. The “bruit placentaire” should be sought for in either iliac region, though Dr. Ferguson avers that he has found it in almost every point of the abdomen. He thinks it is nothing more than the bruit de soufflet in the arteries connecting the placenta to the uterus. The doctor has heard the foetal heart in almost every region of the abdomen. Though it and the placenta are sometimes heard on the same side, and have even been found on the same spot, yet in the majority of cases they are

* Dublin Med. Transactions, vol. I. part I.

met with at opposite sides, generally in the iliac region. The foetal heart, unlike the placenta, is not always heard in the same place in the same individual, that is, it may be found to-day in one point, to-morrow in another, though Dr. Ferguson has never observed it to vary far from the point where first heard. Its double beat is well marked, and the frequency of its pulsations almost always greater, often double that of the mother's heart. In one case, however, the foetal heart was distinctly heard to beat only 28, the mother's being 100, and there was an irregularity in its rhythm. The following is a curious instance of that talent for minute stethoscopic observation which appears to characterize Dr. Corrigan and some others in Dublin.

"A goat had been procured for a very different purpose by Doctors Hunt, Corrigan and myself, and bound on its back on the operating table. I casually applied the stethoscope to its abdomen, without the slightest previous knowledge of its pregnancy, and was surprised to detect almost immediately the distinct double pulsations of a foetal heart. My two friends, to whose accuracy of observation I have been often indebted, satisfied themselves perfectly of the fact, and on examining the uterus about an hour afterwards, we extracted a fetus, of which the minute preparation which I now offer was the heart. On inquiring from the person who sold us the goat, on whose accuracy we could depend, we learned that it was exactly seven weeks from copulation."

It requires nice ears, we should opine, to count with the precision of a pendulum the double pulsations of a foetal heart, "the size of a hazel nut," in the belly of a goat bound upon a table. We quite envy Doctors Corrigan, Hunt, and Ferguson. With the following statement, which deserves attention, we proceed to one of Dr. Ferguson's cases.

"I would beg leave to state, that for the last three years I have been in the habit of examining by the stethoscope every pregnant woman who presented herself, under any circumstances, at either of the public institutions to which I am attached. I have thus had opportunities of testing the value of mediate auscultation in such cases above one hundred times, and in every instance, with but one exception, I could detect either pulsation of the foetal heart or placental noise, generally both, after the patient had passed the fifth month of gestation, and in many, indeed the majority, before that period. In the individual case which I have excepted, I could detect neither the one nor the other; however, I had no opportunity of making a second examination, which should never be omitted in doubtful cases, nor of learning whether the child might have been dead or not; for the woman, contrary to her promise, never returned to me. I should also remark, that in not more than eight or ten cases, did I find it necessary to remove the usual clothes of the patient from beneath the instrument, leaving only the chemise between it and the abdominal parietes; nor to oblige them to assume the horizontal position, which is decidedly more favorable to an accu-

rate examination than the erect or sitting. My usual practice has been to examine them seated on a chair, and without the removal of any part of their dress. *I am well aware that others, who may have made frequent trials, have not been so fortunate in detecting these phenomena*; this is not for me to attempt to explain nor contend about; my sole object is to state facts which I have myself observed, and only claim, what I hope I shall obtain, credit at least for veracity."

Case. In December, 1828, Dr. Ferguson met an eminent general practitioner in consultation, on the case of the daughter of a respectable shop-keeper. Her apparent disease was ascites. She stated that her ailments had been of twelve months standing; that during that time her abdomen had been occasionally enlarged, though more permanently so of late; and that remedies had produced the most beneficial effects, all of which was confirmed by her mother. The agitated manner of the young woman, and the peculiar shape and solidity of the belly, roused Dr. Ferguson's suspicion. Not having a stethoscope with him, he used a roll of paper, and with much difficulty and embarrassment, succeeded in discovering the pulsations of the foetal heart. The announcement of the diagnosis surprised the practitioner, who continued incredulous, till an accouchment dispelled all doubts.—*Ib.*

11. *Remarkable Case of Ovarian Disease.* By W. F. MONTGOMERY, A.M. &c.*—Mary Clarke, ætatis 45, mother of nine children, the youngest 9 years old, was admitted under Dr. Montgomery into Sir Patrick Dun's Hospital, on the 13th August, 1828. There was slight ascites, and a tumor in the right iliac region. There were frequent discharges from the vagina of a fluid like water, and, on examination, a small cauliflower excrescence of the os uteri was detected; the urine was scanty, the pulse weak, and the countenance expressive of peculiar distress. She had first perceived the tumor ten years previously; the ascites had commenced within the last four months. She had formerly had hernia on both sides, and the sac on the right was now distended with the drop-sical fluid.

Diuretics were prescribed; but on the 17th, she complained of pain in the abdomen, relieved by leeches and the hip-bath. The secretion of urine was greatly increased, but so was the ascites, and the uneasiness was such, that on the 31st she was tapped by Dr. Jacob at the left side, as far as possible from the tumor. Six quarts of clear fluid were drawn off, with great relief, and, along with the fluid, several thin membranous flakes passed through the canula,

* Dublin Med. Transactions, vol. I. part I.

and were thought by Dr. Montgomery to be ruptured hydatids. The abdominal tumor could now be traced down into the pelvis at the right side, and extended beyond the median line of the abdomen. In four days, a return of the ascites was taking place, with anasarca of the left leg and thigh. We need not specify the means employed; they procured no benefit. On the 11th September, the operation of tapping was again performed, with the same relief as before, a substance of reddish color and gelatinous consistence escaping through the canula. The tumor was now at least half as large again as on the first tapping, twelve days previously. Diarrhœa was now established—she rapidly sank, and on the 21st she died. The water had not re-accumulated so rapidly after the last tapping.

Sectio Cadaveris. Great emaciation; left leg and thigh very anasarcaous. In the abdomen, much deep yellow-colored serum, and at least two pints of pus.

“On turning aside the integuments, a very singular appearance presented itself; a tumor chiefly composed of fine membranes, dividing it into innumerable cells, which, with their fluid and transparent contents, resembled, at first sight, hydatids; the membranous septa dividing the cells were supplied with blood-vessels of a considerable size, running along their edges, so that the whole tumor presented a clear red color. At its upper and left part there was a deep cleft or fissure, into which the open hand might be passed without any force, and when carried downwards, and towards the right side, it entered a round sac equal in size, and much resembling a large flat turnip; this was the right ovary which lay just under, and was filled with the same structure as the part of the tumor first brought into view.

In fact, it seemed as if the peculiar structure had at first grown in the ovary, which thereby became greatly enlarged, until at length the coat of the ovary had given way, and out of the fissure so formed, the morbid growth continued to enlarge, turning over the edges of the fissure, and covering the front and sides of the ovary in which *it had formerly been contained*, so that the tumor was in a great measure turned inside out.

This change in the state of the tumor might, I conceive, have happened in one or two ways; either by the coat of the ovary giving way to the pressure of the morbid growth within it, which seems probable, from the circumstance of that substance having evidently continued to grow out of the fissure; or the breach in the coat or capsule of the ovary might have been produced by external violence or accident, a cause but too probably true, as I afterwards ascertained that the poor creature had been exposed to a great deal of ill-treatment from a brutal husband. The tumor was of such a size, that while its inferior extremity was in the pelvis, its superior border was as high as the ensiform cartilage, its length being twelve inches and its breadth nine.”

The tumor adhered to the neighbouring parts by some slight, but firm, membranous bands. The uterus was twice its ordinary size,

and scirrhus; the os uteri exhibited the numerous flocculent processes, which are all that remain of cauliflower excrescence after death. The left ovary was somewhat enlarged, tuberculated on its surface, and very hard.

“On this case and dissection I would now wish to make two or three brief observations. With regard to the tumor itself, without wishing to theorize or offer any opinion on its peculiar nature, I believe, in the first place, that it is a form of disease not before observed, as affecting the ovary, or at least not hitherto described, as far as my research enables me to speak. I have dissected a great number of cases of ovarian disease, and have preserved specimens in my museum, of almost all the different species enumerated by authors, but to none of these does the disease in this case bear the slightest resemblance in character; another peculiarity, which I look upon as very remarkable, consists in the open state of the tumor, and its internal surface being in consequence exposed in the living body, and literally in a great degree turned inside out.

From the surface thus exposed, serum must have been abundantly poured out, and hence, perhaps, a cause, or at least one source of the effusion into the peritoneum, and whether the circumstance can be fairly attributed to this, or to some other more general cause, it is to be recollected, that during the period in which the effusion took place most rapidly, the tumor was found to have nearly doubled its surface.

The state of the tumor appears to me also to account for the great disproportion between the uneasiness felt, and the degree of distention existing.

It seems not so easy to account for the œdema of the thigh and leg occurring at the left side, while the tumor was at the right. A very intelligent pupil, Mr. Dwyer, who gave me his valuable assistance in the dissection, suggested that it might perhaps have been caused by the weight of the tumor pushing the enlarged and scirrhus uterus forcibly to the opposite side of the pelvis, and I agree in the probable correctness of this ingenious suggestion.”—*Ib.*

MEDICAL JURISPRUDENCE.

12. *Singular Trial for Infanticide.* (*The Star; Guernsey Commercial and General Advertiser.*)—The particulars of the following extraordinary case are contained in the newspaper mentioned above, for October 25th, 1830. Their authenticity may be relied on, notwithstanding the well-known inaccuracy of newspaper reports, because in Guernsey, where the old French law is still in a great measure followed, the evidence of the witnesses is fully taken in writing, and the newspaper report appears a *verbatim* copy.

Mr. Beasse, a person of tolerable station on the island, carried

on an illicit intercourse with his servant, Sarah Elliot, the consequence of which was, that she became pregnant. Early in the month of May, he mentioned the latter circumstance to a friend, and confided to him his intention of having the girl sent to the adjoining coast of France, or to England, when the period of her delivery approached, in order to escape the scandal. On the night of the 10th of June following, however, her delivery took place in his house,—prematurely, according to the statements of the girl herself, and of Mr. Beasse in his declaration,—and in all probability at least unexpectedly, for he had a party of friends with him that evening till midnight, and when they left his house he accompanied them, and did not return home till half past one, although he knew she was unwell. Medical advice was not procured. The girl was delivered about four or five in the morning of the 11th of a still-born child, as she represented; and in order to keep the affair quiet, and allow her to recruit her strength, she was locked up in her room, and a false story told of her having gone to visit a brother in the neighborhood. It is particularly worthy of remark, that among the steps taken to spread this story, the girl herself, within two hours after her delivery, went to the window of her room, and told her pretended intention to a boy in the garden, who stood about forty paces off. About the same time, Mr. Beasse went to a friend, the same he had consulted formerly, to ask his advice what he should do; and at this person's recommendation he allowed a surgeon to visit the girl at mid-day, who found her in bed with the after-birth not expelled, and who examined the body of the infant, without being able to remark any external appearance of violence. Mr. Beasse likewise made inquiries as to the best mode of secretly burying the child, but no means could be devised that satisfied him, by which it might be buried in the church-yard. Various circumstances having excited a suspicion of foul play, the house was visited on the morning of the 14th, by a constable with two medical men. Mr. Beasse admitted that a child had been born; stated that it had either been still-born, or at least, when he was summoned to the room by his servant, that he found it lying on the floor amidst a quantity of blood, and respiring feebly; and after several attempts at evasion, he conducted the constable to a spot in his garden, where he had buried it. The mother, when questioned on the subject, said that she was only in her fifth month, that after she was taken in labor, she went to bed and there fainted; and that she was ignorant of the sequel, till she came to herself and found the child on the floor dead. She also stated that baby-linen had been provided for the child; but neither she nor Mr. Beasse were able to prove this.

Both Mr. Beasse and the servant were indicted for child-murder, on the 23d of October last. The general evidence brought forward on the trial, was nearly the same with what has just been detailed, with the addition of some of the usual contradictions in the declarations of the prisoners, which it appears unnecessary to enu-

merate. The medical evidence is very minutely reported as delivered by Messrs. O'Brien and Hoskins, who examined the body, and Mr. Mauger, who visited the girl on the morning of her delivery. All of them agree, that the child was not immature, but apparently born at the fulltime; and Mr. O'Brien adds, in confirmation of this opinion, that the state of the female prisoner on the 14th June, four days after her delivery, corresponded with that of one who had brought forth a nine-months' child. The data in support of these statements are not given, so that we cannot judge of their accuracy. But the opinion founded on the state of the woman is obviously much overstretched; at least, we question whether any experienced accoucheur would venture to say, from the state of the mother four days after delivery, whether she had given birth to a seven, eight, or nine months' child.

The body of the child was buried in a napkin, which was much besmeared with blood and meconium; and some florid blood was oozing from the mouth; but no other sign of violence was visible outwardly. On clearing away the blood from the inside of the mouth, the surgeons discovered a lacerated wound under the tongue, which separated the *frœnum linguæ* a considerable distance backward. The lower jaw being then detached from the face, the posterior fauces were seen covered with blood; and when this was removed, two other lacerations were found, one on each side of the palate, extending backwards into the throat; the throat, beyond the lacerations, was filled with blood, on removing which a fourth laceration was discovered, wide enough to admit the fore-finger, penetrating the upper and back part of the gullet, and laying bare the bodies of some of the upper vertebræ. The cellular tissue between the gullet and windpipe was ecchymosed or infiltrated with blood along the whole course of the windpipe down to the root of the lungs. The lungs were high, expanded, and free from putrescence; their color pale pink and mottled; they crepitated when handled, and when cut gave out air and a little blood; they were very buoyant in water, and when a portion was squeezed firmly, it expanded again and still floated. The heart was healthy. The umbilical chord was lacerated about three inches from the navel, and had not been tied. In the abdomen blood was found besmearing the whole viscera. This proceeded from a wound in the rectum, entering from within about two inches above the anus, passing about two inches more between the coats, and then piercing the peritonæal covering; and the course of the wound between the coats was marked by a line of ecchymosis. This wound appeared to have been made with a sharp instrument. The rectum contained scarcely any meconium; but the rest of the great intestines contained the usual quantity.

From these facts, both of the medical gentlemen agree, that the child was born alive and breathed, and that it had been put to death by means of some instrument introduced into the throat, and also into the anus. They deny that it is possible to produce such inju-

ries after death, even immediately after it; they maintain that, in the circumstances of the case, the hydrostatic test, together with the ecchymosis in all the wounds, is certain proof of the child having been born alive; they are of opinion that the wounds might occasion speedy death, but that, on the whole, the wound in the anus was not calculated to produce death with great rapidity, and that those in the throat, though attended with ultimate danger, could not prove immediately fatal, except by the concurrence of suffocation, probably produced at the same time, by the rude means employed. In particular, however, they express great doubts, whether the woman could have inflicted these wounds herself, immediately after delivery. In answer to a query as to this point, Dr. O'Brien says, "the word *possible* has so wide a range, that I would beg leave not to answer it; but a person in the situation of Sarah Elliot, suffering mentally and bodily, as she then must necessarily have done, weltering in her blood, and only in part delivered, I would almost say must be more than human, to possess the strength of purpose and steadiness of hand necessary to perpetrate at that time, the excesses committed on that child." Mr. Mauger also thinks it almost impossible. Mr. Hoskins waived replying to the query, on the ground that he had not seen the woman before or after her delivery.

In opposition to this evidence against the prisoner, Mr. Curtis, a surgeon, was examined on the opinions given by Messrs O'Brien and Hoskins, and states,—that the child might have died of hemorrhage from the untied umbilical cord,—that it might breathe in the passages before delivery, so as to expand the lungs as remarked by the inspectors,—that he has known women resume their daily occupations on the very day of their delivery; and has no doubt some are in such a state as to be able to kill their child;—that if a woman, as in the prisoner Elliot's instance, is brought to bed at four or five in the morning, in two hours is able to go to her window, and talk to a person forty yards off so as to be heard, and on the same day resumes her daily occupations and washes her room, she would be able to destroy her child immediately after delivery;—that he has actually met with instances of women, who immediately after delivery were so strong, that they could have destroyed their children;—that the wounds inflicted in the prisoner's child required little force to inflict them; that ecchymosis may be produced on the dead body.

Such was the evidence. Both prisoners were found guilty. Mr. Beasse was found guilty as principal, and sentenced to death, which sentence was subsequently put in execution; and Sarah Elliot, being found guilty as accessory, was sentenced to make the *amende honorable* before the court, and then to six years' banishment from Guernsey.

We have but a few remarks to add to this interesting narrative. It is clear the child was born alive. This is proved by the state of the lungs, with the ecchymosis and internal hemorrhage, which, notwithstanding Mr. Curtis's opinion, could not have occurred after

death. It is also clear, that the child was put to a violent death, the wounds and hemorrhage being sufficient to account for it, and such as put accidental death quite out of the question. The only difficulty in the case, was to fix on the actual murderer. One or other of the prisoners certainly was the murderer; for no one else was in the house at the time. But it is by no means so clear to our minds, as it seems to have been to the court, which of the two was the guilty person. Notwithstanding the opinion of Mr. O'Brien and Mr. Mauger, there cannot be a question among well-informed medical jurists, that the female prisoner might have killed the child herself immediately after delivery, as Mr. Curtis very correctly maintained. Such being the case, we do not see any evidence to prove who was principal and who accessory; or rather,—for the difficulty now stated would in *British* law be no impediment to inflicting the full pains of law on both as murderers,—we see no satisfactory proof in the evidence, that there was an accessory at all, and no proof which of the two did the deed. If we suppose that either one or the other murdered the child, there is nothing in the conduct of the remaining party, or in the evidence generally, which might not be perfectly well explained, on the principle that he or she acted with the view of keeping quiet, what the murderer was endeavoring to pass off as the delivery of a still-born child. We are of opinion, then, that the court acted hastily in executing the prisoner Beasse, and feel convinced, that he would have escaped either in an English or Scotch court of justice.—*Ed. Med. and Surg. Journal, for April, 1831.*

CHEMISTRY.

13. *Annales de Chimie et de Physique.* Par MM. GAY LUSSAC ET ARAGO. Oct. 1830.—We regret much that the publication of this excellent periodical has for some time back been extremely irregular. The October number, for instance, only reached this country on the 1st of February, and when we shall have another number is as uncertain as the return of a comet. The value, however, of its articles is always such as to make amends for the disagreeable irregularity which attends the publication of the work.

Chemical constitution of the Retina and Optic Nerves.—In the present number we find two very interesting papers, one on the chemical constitution of the retina and optic nerves, by M. Lassaigne; the second on a new œnometer, or instrument for the purpose of ascertaining the quantity of alcohol contained in spirituous liquors.

M. Lassaigne commences by observing, that as yet but few tissues have been sufficiently studied with regard to their chemical relations. In the examinations, however, which have been made,

he justly observes that it is not unusual to find the opinions of anatomists and physiologists, concerning the nature of certain products of organization, confirmed by chemical research ; thus demonstrating, that in the study of the natural sciences, it is by no means rare to arrive at the same truth by different modes of investigation. At the request of Magendie, M. Lassaigne undertook the analysis of the retina and optic nerves of the horse.

The retina was first gently washed in distilled water, to separate any adherent vitreous humour, and then dried between folds of blotting paper, and weighed. Its hygrometric moisture was next expelled by exposure to a sufficient temperature, after which operation the membrane was again weighed, and the difference indicated the quantity of water it contains in the natural state, and which amounts to 92.9 per cent. The retina was next treated with boiling alcohol, which, on cooling after filtration, deposited white flocculi on the sides of the vessel, which flocculi finally united into a white unctuous mass, soluble in boiling, insoluble in cold alcohol, neutral, insipid, dissolving by a gentle heat, and partly soluble in caustic potassa, by which it was converted into soap. The insoluble portion, when deflagrated with fused nitrate of potassa in a silver crucible, afforded with lime-water a precipitate of the phosphate of lime.

Finally, the portion of retina undissolved by the boiling alcohol, was treated with pure, concentrated muriatic acid, which dissolved it entirely, and the solution assumed a violet tint,—an effect produced on all concrete albuminous matters.

From these experiments, M. Lassaigne concludes, that the retina is formed of the same elements as the cerebral and nervous substance, and is composed of

Water,	-	-	-	-	-	0,520
Saponifiable fatty matter, and fatty matter containing phosphorus,	-	-	-	-	-	0,005
Albumen,	-	-	-	-	-	0,035

The optic nerves similarly examined, afforded nearly the same results, together with proofs of the presence of osmazone, muriate of soda, and gelatine.—*Lond. Lancet*, No. 390. Feb. 1831.

14. *On the Iodates, Bromates, and Chlorates, of the Vegetable Alkalies.* By M. SERULLAS. (*Anales de Chimie*, Nov., 1830.)—In this important paper, the author, M. Serullas, has pointed out some new facts of great interest connected with the vegetable alkalies, of which the following is an abridged account.

M. Serullas finds, that when morphine, even in very minute quantities, is brought into contact with iodic acid, iodine is disengaged, and a blue color will be communicated to starch ; this effect he finds to be peculiar to morphine, and does not occur with any of the other vegetable alkalies. With quinine, iodic acid forms a

salt which crystallizes in silky needles, like the sulphate of that base. With cinchonine, iodic acid forms a salt in very fine prismatic crystals. When a solution of iodic acid is heated gently with strychnine, the liquor assumes a red-wine color, and by concentration long rose-colored crystals, like needles, are produced. The iodate of strychnine is a virulent poison, a grain and a half proving fatal to rabbits in a short space of time. Brucine also forms a salt with iodic acid; the solution at first is of a deep-red color, but soon loses that tint, becomes transparent, and yields colorless crystals of the neutral salt. The iodate of veratrine forms a gummy, uncrystallizable mass; narcotine and picrotoxine dissolve in iodic acid, but no combination is formed; the acid is not neutralized, and the vegetable principles crystallize from the solution unchanged.

All the above mentioned iodates are more or less soluble in water and alcohol. By the application of heat they are suddenly decomposed, usually with a slight explosion. Sulphuric acid, added carefully so as to avoid excess, disengages iodine, which may be recognised by starch. A prominent and important character of the iodates of the vegetable alkalies is the property which they possess of being precipitated by an excess of iodic acid, or even by a concentration of their solutions, a bin. iodate (analogous to the bitartrate of potassa) being precipitated in both cases. These superiodates are colorless, detonate at a slightly increased heat, and even by friction, and no carbonaceous residuum remains after the detonation, the excess of acid consuming all the carbon.

In pointing out the above facts, the author states that his object was principally to show the striking difference between the comportment of morphine and the other vegetable alkalies to iodic acid, morphine decomposing the acid, while the others unite with it and form definite series of neutral and acidulous salts. M. Serullas also offers some appropriate, but obvious remarks, on the probable medicinal value of these new compounds.

Chlorates. The combination of chloric acid with the alcaloids is easily accomplished, by heating the acid with these bases; the crystalline forms of the resulting compounds are very peculiar and remarkable; like the iodates, they are more or less soluble in alcohol and water. In all cases it is to be remarked, that great purity of the bases is essential; the presence of lime or chalk (which they not unfrequently contain) is to be especially avoided, as this adulteration causes the formation of various insoluble calculous salts during the process of preparation.

The chlorate of morphine occurs in long prisms, which are colored yellow by nitric acid; added to iodic acid, it sets free iodine, a circumstance very remarkable, from the high degree of oxydation in both acids, and establishing the particular effects of morphine in all its combinations on iodic acid. It appears, also, that bromic acid is decomposed by morphine; but further experiments are wanting on this subject.

The chlorates of quinine, cinchonine, and strychnine, have also been prepared by M. Serullas. The chlorate of brucine is of a red color in dilute solution ; when crystallized, colorless, and occurring in the form of transparent rhomboids, precisely like the carbonate of lime ; this colorless salt is changed to a vivid red by nitric acid. The chlorate of veratrine does not assume a crystalline arrangement.

All these chlorates are decomposed by excess of iodic acid, the super-iodate of the base being thrown down. Iodic acid is also found to precipitate in the same way the chlorates of lime and magnesia ; and when added to the chlorate of potash, and the liquor concentrated, chloric acid is set free, and the iodate remains. The sulphate of quinine is entirely decomposed in this manner. In the same paper, M. Serullas describes the hydrofluates (both simple and silicated) of the alkaloids. The hydrofluat of quinine occurs in needle-shaped crystals of a dazzling whiteness. A solution of boracic acid, boiled with quinine, affords, on cooling, crystals of the neutral borate. Finally, M. Serullas adds an account of his quantitative analysis of the iodate and chlorate of cinchonine. Two decigrammes of the first were precipitated by caustic potassa, the cinchonine dried and weighed ; the iodate of potassa was evaporated to dryness, calcined, and thus converted into an iodide of potassium, which, when re-dissolved, was precipitated by nitrate of silver, and the precipitate washed and weighed. From the results of this analysis, 100 parts of iodate of cinchonine are composed of

Iodic acid,	-	-	-	-	33—85
Cinchonine,	-	-	-	-	66—15

From similar experiments on the chlorate, it was found to contain, as the mean of several trials—

Chloric acid,	-	-	-	-	19—48
Cinchonine,	-	-	-	-	80—52

In consequence of M. Serullas' able observations, it is necessary to explain how far they relate to the mode of detecting nitric acid by morphine, which we have recommended. Unquestionably they would invalidate its *logical* accuracy to a certain extent, if we operated on the *free acid* itself ; but it will be remembered that we recommend the mixture suspected to contain nitric acid, to be neutralized with potassa, and then decomposed by dilute sulphuric acid, in contact with a particle of morphine. In this case, the action on the morphine is entirely different from that which takes place when the *free* iodic, chloric, or bromic acid, acts upon that substance. Thus if we add sulphuric acid to the iodate of potassa, iodine is disengaged, and will color blue a drop of a solution of starch. If the salt be the chlorate of potash, euchlorine is expelled without coloring the morphine at all. If the salt, lastly, be the bromate of potassa, bromine is set free, which is of a brownish color, but totally different from the brilliant vermilion struck with

morphine by nitric acid, and moreover it may be entirely volatilized by the heat of the hand.

These observations will prevent any difficulty, in a medico-legal point of view, as to the colors produced with morphine, by the nitric, chloric, bromic, or iodic acids.—*Ib.* No. 396.

15. *On the Adulterations of Strychnine.* By M. ROBIQUET. (*Journ. de Pharmacie.*)—The difficulty connected with the preparation of strychnine, and the minute quantity contained in the substances from which it is prepared, have necessarily kept it at a very high price; but the great consumption of the article of late in India, where it is used for the destruction of wild beasts, has induced some druggists to seek for means of diminishing its value, and they have had recourse to their favorite method of increasing the weight by the admixture of various adulterations, and they have carried this species of industry so far as to add 40 or 50 per cent. of foreign matter, especially magnesia, to the strychnine. This fraud is easily detected by the calcination of the suspected sample. Another mode of adulteration consists in mixing the impure strychnine with bone black, which always contains some phosphate of lime, and then acting on the mixture by a diluted acid, which at the same time, dissolves the strychnine and the earthy salt; the solution is then filtered and precipitated by ammonia, by which means the vegetable alkali is mixed with a considerable quantity of the phosphate. This mixture may be detected in the same manner as that with magnesia. The purchasers of the French vegetable alkalies should attend to this circumstance, for the same frauds are doubtless practised with morphine and its preparations.—*Id.*

16. *Colombine—new Crystalline substance, obtained from Colomba Root.* By M. WITTSTOCK. (*Journal de Pharmacie.*)—By treating colomba root with alcohol, sp. gr. 835, and distilling off two thirds, after the residuum has been allowed to stand for some days, a crystalline deposition takes place of beautiful transparent quadrilateral prisms, with rhomboidal bases. A still better way, and one by which the colombine may be obtained quite pure, and in a very short time, is by acting on the root with ether, sp. gr. 0.725, and allowing the tincture thus prepared to evaporate spontaneously; only two drachms of the root are required for the success of this process. Colombine is inodorous and excessively bitter; it does not change the color of test paper; it is freely soluble in boiling alcohol and ether, and remarkably so in warm acetic acid, from which the excess separates on cooling in the crystalline form. Concentrated sulphuric acid causes its solutions to assume a deep red color. From some experiments on rabbits, it appears that co-

lombine is capable of acting as an energetic narcotic in small doses.—*Ib.*

17. *Observations on the Solidification of Turpentine by Calcined Magnesia.* By J. FAURE, Sen., Bourdeaux. (*Journal de Pharmacie.*)—The essence of turpentine has been successfully employed for many years in different affections, remarkably so as a vermifuge, and very recently as a remedy in neuralgic diseases. Having witnessed the difficulty frequently experienced in its administration from the invincible dislike many patients conceive for its acrid and caustic flavor, I have undertaken a series of experiments, for the purpose of fixing or enveloping the turpentine, so as to destroy this unpleasant property. The successful results of these researches are as follows:—

1. Venice turpentine, and that obtained from the *terebinthina pinea*, was treated with calcined magnesia in different proportions. These mixtures became solid in the space of a few days, varying according to the quantity of magnesia employed.

2. The same turpentines were mixed with one third of their quantity of the essential oil. These mixtures, in some instances, acquired a sufficient degree of consistence, in others became altogether solidified.

3. The solid masses were divided and boiled in alcohol, which dissolved away the turpentine, leaving the magnesia entirely unaltered in its chemical relations.

Magnesia is also capable of forming a modified combination with copaiba balsam, the resin of which it separates, acting on the volatile oil as a mechanical absorbent alone.

On these principles M. Faure proposes formulæ for administering turpentine, its essential oil, and copaiba balsam, in the pillular form. These we do not extract, because the turpentines of various countries differ remarkably in the degree of facility with which they become solidified, and it is only by experiment that the apothecary can become acquainted with the necessary proportions to be employed.—*Ib.*

18. *Mode of detecting the adulterations of some Essential Oils with Essence of Turpentine.* (*Arch. de Brandes, vol. xxxiii. arch. 3.*)—The addition of a little iodine to the essential oil of juniper, produces a great increase of temperature, with the disengagement of yellowish violet vapors. The residue on cooling is fluid, of a yellowish brown color, and possesses the odor of the essential oil.

Intense reaction follows the contact of the essential oil of savine with iodine, great heat is extricated, and similar vapors are evolved.

The residue is a solid resinous mass of deep brown reddish color, and emphyreumatic smell. The essential oils of tanzy, peppermint, and rue, do not suffer the slightest change. The color of the essential oil of caraway is altered to a beautiful reddish brown.

By the addition of a minute quantity of oil of turpentine to those oils which show no changes with iodine, a vehement action immediately ensues. Iodine may thus be used as a re-agent for detecting turpentine, which, it seems, is a frequent adulteration of the oils on which it possesses no action when pure. The experiments above described were performed on oils prepared with the utmost care by the author of the essay, M. Valet.--*Ib.*

19. *Analysis of Sulphureous Waters.* (No. dernier de *Journal de Pharmacie.*)—Numerous examples of sulphureous waters occur, in which the sulphur exists in the double form of free and combined sulphuretted hydrogen. It being important to decide how much is free, and how much in combination, great difficulty has been experienced in devising an analytic process for that purpose. M. Henry (fils) has at length succeeded, and has furnished us with a simple, elegant, and ready mode of proceeding. It consists in agitating a certain quantity of the mineral water with a known weight of finely divided metallic silver, in a closely stoppered bottle. All the free sulphuretted hydrogen is then decomposed, and its sulphur absorbed by the silver; the quantity is then estimated by the increase of weight gained by the latter. The water is then decanted into another bottle of equal size, fitted with an accurately ground stopper, and containing a few crystals of the ammoniaco-nitrate of silver, by which the carbonates, muriates, and hydro-sulphurets, are decomposed and precipitated. This precipitate being collected, and washed in ammonia, the carbonates and muriates (chlorurets) are dissolved, and the sulphuret left behind. Of this, 100 parts, carefully dried, indicate 14 of the sulphuretted hydrogen, or, as M. Henry terms it, hydro-sulphuric acid.--*Ib.*

20. *Application of Mica, or Muscovy Glass, to minute chemical analysis.* (*Arch. de Brundes.*)—It is well known that mica is not brittle, and that it does not burn in the flame of a candle; it is therefore much employed in Russia for lamps and windows, and M. Voget is in the habit of using it for chemical analysis on the small scale. For this purpose, a thin scale of mica is selected, and on this is placed the substance for examination, which may then be held over the spirit-lamp flame. An infinity of experiments may thus be readily performed, and repeated over and over again, without loss of materials, and with incredible economy of time. After

the heating, it is sufficient to rub the bit of mica with a moistened rag, and it is as perfect as ever. Detonations, concentrations of metallic salts, the destruction of minute quantities of moist substances, reduction of metals, are all readily performed in this cheap and simple manner. The transparency of the mica permits every change of color to be clearly seen. Heat is readily communicated to the substance examined, while the imperfect conducting powers of the mica prevent any inconvenience, by holding it in the fingers to the flame. We cannot, however, use it with the blowpipe, for the summit of the flame produces a white stain on the surface like lime.

In order to ascertain whether the acids, alkalies, salts, or other substances, possessed any chemical action on mica, even when aided by an increased temperature, M. Voget made the following trials:—

A few drops of the sulphuric, nitric, muriatic, acetic, phosphoric, and solution of tartaric acids, were successively concentrated on a slip of mica over the flame of a candle. The phosphoric acid left a faint, permanent mark, the other acids produced no alteration whatever. Caustic potash was fused without any effect. Iodic was volatilized, and left no traces. The nitrate of silver fused, and left, after the expulsion of its acid, a mark of silver, which was easily rubbed off. The acetate and nitrate of lead left a little yellow oxide and metallic lead. The tartrate of antimony and potassa was partly carbonized, and the metal was reduced. Calomel volatilized, and left no stain. Sulphur and phosphorus melted, and burnt away without re-acting on the mica in the slightest degree. These experiments are amply sufficient to call the attention of chemists to an auxiliary in analytic research, which recommends itself by its extreme simplicity, its moderate price, and its practical utility.—*It.*

21. *Nicotine, the alkaloid principle of Tobacco.* (Abridged from *Geiger's Magazin sur Pharmacie*.)—MM. Posselt and Reimann have completely succeeded in separating the alkaloid principle which Vanquelin believed to exist in tobacco, but which that distinguished chemist failed to obtain in a separate state. The new substance nicotine, as described by the present authors, is liquid at 6° cent. (41° Fahr.) transparent, of a brown red color, of a disagreeable, pungent odor, like that of dried tobacco, and which is increased by an elevation of temperature; taste excessively acrid, and remaining long on the tongue. It communicates a greasy stain to paper, disappearing in twelve hours; specific gravity greater than water; volatile in the open air, leaving a small resinous residuum; boils at 246° cent., (460° Fahr.) burns when touched by a lighted taper, and at 100° cent. (212° Fahr.) evolves abundant

white vapor. Nicotine is soluble in water in all proportions; the solution is decidedly alkaline, and, diluted with 10,000 parts of water, still preserves its acid taste. It is equally soluble in alcohol, ether, and almond oil. The ethereal solution, mixed with muriatic, tartaric, or acetic acid, parts with all its nicotine, and salts, insoluble in ether, are produced. Neutralized by phosphoric acid, the new alkaloid furnishes a colorless sirup, which, when exposed to the sun's rays, affords crystals like cholesteroline. The sulphate of nicotine assumes the form of an amorphous mass, slightly acid. Finally, with oxalic acid, nicotine forms a crystalline soluble compound. The nitric acid does not unite with, but nearly effects the decomposition of this alkaloid.

The analysis of tobacco by M.M. Posselt and Reimann has been crowned by the faculty of medicine at Heidelberg.—*Ib.*

22. *On the employment of Iodine in Cutaneous Diseases.* (By THOMAS JEFFREYS, M. D., Liverpool.)—The singularly good effects of iodine in glandular diseases are now generally known and admitted, but I am not aware of its having been used internally in cutaneous diseases, and as I am inclined to think that it will be found an efficacious agent in the cure of some of them when almost every other remedy has failed, I beg to communicate the following remarks on the subject.

About seven years ago, the external application of the tincture of iodine was much talked of, and used by myself and others in Liverpool; and, as far as my own opportunities were concerned, with little or no benefit. Having, at that time, a case of a very obstinate nature, in which the disease had existed chiefly upon the back of the hands, for several years, under the form of psoriasis, I thought it probable that, as the external use of iodine had, in some instances, been successful, it might be worth a trial given internally. The result was a complete removal of the impetiginous eruption, although the disease had been distressingly troublesome for six or seven years, more or less. In this instance, almost every remedy in ordinary use had been tried in vain; the Harrogate waters drunk at the well, with the aid of the baths, for five weeks, afforded temporary relief, but nothing more. I began with ten drops twice a day, increasing them daily, until thirty were taken night and morning, for one month after the full dose had been attained. It may, however, be worthy of remark, that the unpleasant and depressing sensation upon the nervous system was such as almost to deter me from its use,—an effect which continued, more or less, for many months, and which was almost as bad as the disease itself. This inconvenience, however, I am inclined to think, will be more felt by those who are possessed of nervous irritability, than by the robust.

Since the above trial, I have prescribed it in other cases of

psoriasis, and also in the different varieties of herpes, and with almost never failing success in lepra vulgaris, more especially when, in the latter, it was aided by the local application of diluted nitrated mercurial ointment. I could furnish your journal with many cases in detail, illustrative of the good effects of this remedy, but as my object in this communication is merely to draw the attention of those to it who may possess more frequent opportunities of prescribing it than I have, I think they will not be disappointed in it, although they may possess other remedies, which either experience or prejudice may not allow them to consider less efficacious.—*lb.*

DOMESTIC INTELLIGENCE.

1. *Remarks on Paracentesis Abdominis, with Cases of Ascites.* By WILLIAM BEAUMONT, M.D.—U. S. A. Fort Crawford, Michigan Territory.—From the notice taken of Dr. Jabes W. Hewstis' "Remarks in relation to the use of the Trocar in *paracentesis abdominis*," suggesting the "difficulties attending its ordinary use," and his new method of "puncturing with the common thumb lancet," and then introducing "*a quill cut off at both ends*, for a canula to conduct the water," I am induced to believe, that the following cases and observations may not be altogether uninteresting, though they do not develope any thing new or uncommon in practical surgery.

Truly awarding to Dr. Hewstis, all due credit for his ingenious, discoveries and improvements in surgery, I am inclined to believe, (if truth be written in *old books*,) that in performing the operation of *paracentesis*, the method of puncturing with a lancet, and then introducing a canula, has existed ever since the times of *Galen*, *Celsus* and *Cælius Aurelianus*, and has been practised, *even in this country*, for 15 or 20 years or more,—"*Celsus* made the puncture with an iron instrument, into which he afterwards introduced a leaden pipe, through which the water was evacuated.—*Cælius Aurelianus* made the puncture with a *lancet*, and then introduced a female catheter to draw off the water." Modern authors suggest the same practice; I have practised it *invariably* for the last eight years, and find it far preferable to any other method, it being equally simple, and perhaps safer, than phlebotomy or vaccination, and very little exceeding the pain of either in its performance. But the place *where* it should be performed, is, however, in my estimation, a still greater desideratum, in point of ease and safety, than even the *manner*.

Different points of the abdomen have been recommended and extolled, as most conducive to safety and success, by different authors, both ancient and modern, from *Hippocrates* down to the *Bells* and the *Caspers*; but there is no place, where either the *lancet* or the *trocar*, can be introduced with so much ease safety, and success, as directly at the umbilicus. This, we also learn from Van Sweiten.

was pointed out in the writings, and practised in the time of Celsus—is again suggested by Cooper and Bell; but whether it has ever been reduced to general practice, I know not—suffice it for me to know, that the *lancet*, or even the *trocar*, at this point, meets with little, or no sensible resistance, occasions very slight pain, almost infallibly evacuates the abdomen, (in simple ascites,) and causes no inflammation of the peritoneum and abdominal muscles. It combines facility, effect, and freedom from pain or danger, three very important considerations in operative surgery.

I have operated many times in this way, and have invariably perforated directly into the umbilical ring, and have never experienced the occurrence of an unfavorable symptom, circumstance, or failure of success. I have generally used the abscess lancet for puncturing, and then introduced the trocar, withdrawn the stilette, and left the canula in, to conduct off the fluid.

My determination to follow the suggestions of puncturing at the umbilicus, was first excited from its being much protruded, the ring considerably dilated, and the integuments appearing thin, and almost transparent, in a patient who came to me for the operation in 1823. The successful attempt, and frequent repetition, has verified my opinion, and justifies the practice. There is nothing to forbid the operation at this place, for there are no parts in apposition, subject to be injured; though it was once *seriously suggested*, by an *eminent M. D.* (no less a personage, neither, than a popular public lecturer on anatomy, and *professor of surgery*, in one of our medical schools,) to whom I was speaking of the feasibility of the operation, "*that the funis umbilicus would be endangered, by puncturing at the navel,*" as though its string continued distinct and entire in adults, as in early infancy—an objection, I must confess, I did not expect to hear from such professional authority, as the suggestion did not comport with *my* observations in post mortem examinations.

The following cases may serve to show the practical safety and success of the operation after this method. without further remarks, and if they can be of any utility to the medical profession, *without any prejudice to your journal*, you are at liberty to insert them in any of your future numbers.

Case 1. M. St. Andre, an old Canadian Frenchman, applied to me, at Fort Mackinac, in September, 1823, for medical relief, in a case of (as he called it, swelling of his belly and legs,) ascites and general anasarca, which, he said, had been coming upon him about two years. He had been a strong athletic man, and a hard drinker—a great endurer of fatigue, and exposures to inclemencies of weather, till within 6 or 8 years last past, having been engaged as a voyager to the American, or North-western Fur Companies, for many years previous. At the time he came to me, he was laboring under a most enormous and painful distention of the abdomen, and a general anasarca of his lower extremities—the umbilical ring was greatly dilated, and the navel protruded nearly an inch beyond its natural position. The tunica vaginalis testis, of the right side, was also

much distended, when in an erect position, but partially subsided in a recumbent posture, and on his back.

From the absence of some of the more generally urgent symptoms of this disease, I put him under medical treatment at first; but finding little or no advantage from this course, and the pain and distention increasing, I determined upon the operation; and on the 12th of the month, punctured with the common trocar, through the rectus muscle, midway between the pubis and navel, and drew off two and a half gallons of yellow water, which gave great and instantaneous relief—the water continued to drip from the puncture for several days, during which time, he was free from pain or distress—the medical treatment was continued after the operation, with the additions of stimulating embrocations, friction and compression with flannel bandages, applied with equal pressure, over the whole abdomen. This seemed greatly to improve his condition for 6 or 8 days, until the puncture closed, when the abdomen began to fill again, with a recurrence of the former distress, pain, difficulty of breathing.

On the 20th, the pains and distention having become about as at first operation, I punctured again in the same manner, and near the same place, and took out *eleven quarts* of almost limpid water.—This afforded similar relief,—continued the former treatment.

On the 29th the vaginal tunic of the right testis, having become painfully distended, I punctured it with a bleeding lancet, and drew off *three quarts* of bloody serum.

October 4th. The fulness, pain and tension of the abdomen having again returned, I introduced the trocar near the last place, and took away *twelve quarts* of bloody water—treatment continued as before.

October 10th. The abdomen becoming again distended, with increased distress, punctured again, and evacuated *twelve quarts* clear water. After this operation, his condition seemed to improve much for 12 or 15 days, under a free and liberal use of tonics; such as infusions of the bitter woods, bark, radix serpentaria, with small doses of digitalis, camphor and opium, and the continuation of friction and bandages.

October 25th. The water having now again accumulated, I punctured and took away *twelve quarts*, with the usual effect of immediately relieving the distress.

These symptoms and condition of the abdomen, continuing to recur every 8 or 10 days, were as often relieved by the operation, viz.:—

Novem. 9. Abdomen fully distended, the umbilical ring unusually dilated, and the integuments protruded and thin, I resolved to puncture at this place, and with an abscess lancet, punctured directly into the navel, through the umbilical ring, then inserted a trocar and canula, withdrew the stilette, and drew off *twelve quarts* of yellowish thin fluid.

Novem. 15th. Punctured again in the same manner, at the umbilicus, and drew off *fourteen quarts*.

Novem. 23d. Repeated the same operation at the navel, and took away *twelve quarts*.

Decem. 1st. Perforated at the umbilicus, and drew off *fourteen quarts*,—left the canula in the puncture, confined by straps and stopped with a cork.

Next morning at 6 o'clock, patient drew the cork and let off *four quarts*—and at 10 o'clock A. M. same day, let off *two quarts* more, and withdrew the canula.

Decem. 7th. Punctured again at the same place, and took away *ten quarts*.

Decem. 15th. Punctured again at the umbilicus, and let off *ten quarts*. These last operations gave the usual relief for 4 or 5 days. Indeed, they were the only means of relief he desired, and every time his abdomen began to be distended, he would importune me to operate without delay.

The patient had now become very feeble, emaciated, and discouraged, having been for the last 15 or 20 days, rapidly reduced by a colliquative diarrhœa, loss of appetite, and irritative fever. On the 16th, in consequence of imprudence and exposure to night air, and a storm, he was suddenly and violently attacked with acute pain in the left side, great dyspnœa, palpation of the heart and syncope.

These symptoms continuing, with increased violence, until the evening of the 18th,—he died.

The prejudices and superstition of his relatives and associates, prevented any post-mortem examination.

The whole *measured* quantity taken from this patient, at eleven tappings, amounted to *one hundred and forty-eight quarts*, (thirty-four and a half gallons,)—besides what dripped from the punctures for 2 or 3 days after each operation, and from punctures made on his feet and legs, to relieve the œdema of his lower extremities, which, I am confident, was not less than *ten gallons* more.

Case 2d. Lieut. S— C—, of the U. S. army,—naturally strong constitution, and sanguine temperament, was brought to Fort Niagara, New-York, on the 9th of July, 1825, laboring under a most distressing ascites and general anasarca, with his abdomen enormously distended, rigidly tense, and very painful—extremely debilitated, and apparently in the last stage of life.

He had been frequently ill, for 2 or 3 years previous, with common remittent fevers, accompanied with symptoms of acute hepatitis, which had as often been relieved by the remedies in common use for the removal of these symptoms.

At Fort Mackinac, on the 5th of July, 1824, after a severe debauch the previous evening, he was most violently seized with pleuritis, terminating in a low typhus, from which he but just escaped with life. He, however, regained his usual health, in the course of 8 or 10 weeks. But from the continuance of intemperate habits.

and the excessive use of ardent spirits, his health became again impaired in the spring of 1825, while at Fort Howard, Green Bay, from whence, by the *advise* and consent of his *physician* and friends, he started in June, 1825, for Philadelphia, to consult Dr. Physic, on the nature and cure of his disease.

But, continuing to get worse as he descended the lakes, he arrived at Buffalo in a very feeble condition, and finding himself unable to proceed on his intended journey, changed his determination, and directed his course to Fort Niagara, to put himself under my care and treatment.

On his arrival here, in the evening of June 9th, after having been brought on his bed, in an open wagon, over rough roads, from Buffalo 28 or 30 miles, exposed to the scorching rays of an *excessively* hot sun, he was nearly exhausted, distressed, and on the very verge of death,—his pulse almost extinct, even at the axilla, and quite imperceptible at the wrists—his extremities cold, and respiration laboriously difficult and painful.

After much exertion, warm friction, nourishment, stimulating and attentive nursing for several hours, he revived, to suffer a very distressful and sleepless night.

On the morning of the 10th, he felt some easier, having partially recovered from the fatigues of the day before; but experienced no essential relief from the pain of the abdominal distention and dyspnoea—he continued through the day in great and increasing distress.

Believing an immediate operation to be the only effectual means of relief in this stage of the disease, I performed upon him, at about 11 o'clock A. M., on the 11th, by puncturing with an abscess lancet, directly into the umbilical ring, into which I introduced the trocar and canula, and drew off eighteen quarts of bloody serum, which gave immediate relief, without any unpleasant symptoms ensuing.

After evacuating the water—withdrew the canula, applied compresses and flannel bandage—gave an opiate, and put him quietly to rest.

12 o'clock M., sleeping quietly;—1 o'clock P. M., awake, cheerful, and quite free from pain or distress;—2 o'clock P. M., his bowels being inactive, and inclined to costiveness, directed a laxative dose of Carb. Magnesia and Manna, which had the desired effect in a few hours.

With a view to effect a radical cure, and drawing my conclusions from the particular indications of the disease at this time, I adopted as a general plan of treatment, extension and continued vesication upon the trunk and lower extremities; camphorated mercurial friction, thoroughly applied over the abdomen, and particularly to the right hypochondrium, and firm compression with flannel bandages, *externally*;—*internally*, I gave 15 gtt. saturated tincture of digitalis, with 2 ℥ss solution of super. tart. potassæ, every four hours—10 or 12 grs. calomel per se, every second or third evening, with occasional eccoprotic draughts, or enemata, which seldom failed of producing

copious vitiated bilious discharges from the bowels, and afforded great relief—gentle tonics and mild stimulants at regular times and uniform quantities, such as cortex aurant, chamomile, radix serpentaria, and good port or madeira wines; nourishing diet of easy digestion, as tapioca, arrow-root, animal broths, soft eggs, toast, &c. &c.

Under this treatment, he continued to improve daily, with an occasional recurrence of the more painful sensations of yielding disease, which were soon relieved by some little variation of medicines, until the 10th of September, 1825, when he left the post in perfect health.

This patient afterwards returned to military duty in his regiment; but had the misfortune, in 1828 or '29, to be tried and cashiered by a general court martial, and soon after died.

2. *A Case of Epilepsy, successfully treated with the Tincture of Iodine.* By SIDNEY S. FRANKLIN, M. D., New-York.—O. B. early displayed great precocity of intellect, and was endowed with proportionate physical vigor. His complexion was fair, and his temperament sanguine. He was quickly impelled to anger, but as easily soothed;—indignant at insult, but alive to kindness;—disposed to friendship, but discriminating in his selection of intimates;—ambitious beyond his years, possessing an extraordinary memory, and persevering in spite of all obstacles. The expectations which were indulged in by his friends were, however, much damped by the occurrence of several attacks of epilepsy; the incipient symptoms, and progressive frequency of which, I will relate.

His nervous system from early boyhood indicated an excessive irritability and sensibility to external impressions. Whether this was congenital, or induced, as his mother surmised, by excessive doses of calomel, prescribed by a medical gentleman at the south, during a fit of sickness, I am unable to decide. When about eight years of age, the attention of his parents was directed to the position he would assume, when injured by any external agent;—if his toes struck against a stone, or his fingers were irritated by any sharp instrument, as a pin or needle,—with his eyes protruding,—the muscles of his mouth agitated, his arms contracted, and elevated towards his head, he would stand as though transfixed with horror at the sight of some terrible object. As these paroxysms subsided in a few seconds, they were rather attributed to a foolish habit he had acquired, than to any actual disease; and under this impression, he was frequently reproved by his parents. About this time he escaped their cognizance, by being sent to school in the country, where, from subsequent information, it appears the paroxysms increased rapidly in severity and number. He would there occasionally, for the first, when unexpectedly struck by his playmates, or upon receiving an injury, fall to the ground, without the

ability of resisting the impulse. His teacher having directed the boys to dash water in his face, to bring him to, they would frequently induce a fit, by striking or pricking him, for the sport it afforded in throwing water. His countenance, hitherto indicative of vivacity and intelligence, now began to assume the vacancy so peculiar to this complaint, and his mental faculties, hitherto vigorous, began to be impaired. After an absence of a year, he returned home, when his altered appearance, and the frequency of his fits, immediately attracted attention, and excited great alarm. The most trivial injury induced a fit, and he would now invariably fall, bruising and lacerating himself dreadfully : always falling upon his face, or back of his head, generally the latter, and that so frequently as to establish a natural issue. It was now, for the first, discovered that these fits occurred during sleep. At these times he would foam at the mouth, roll his eyes ; his hands and arms would be spasmodically contracted, and drawn towards his head ; he would gasp for breath ; and, in his worst fits, would turn black in his face. These paroxysms subsided in four or five minutes, leaving him very languid and exhausted. He said he was conscious of what was passing about him, but could not articulate ; the pain he described as that caused by two bones meeting, and rubbing in his chest. The sense of his situation operated so acutely upon him, that he preferred death to life. His appetite was good ; the food was regularly assimilated. He complained of no pain in any part of the system during the intervals of the paroxysms.

Such was the state of the patient when I commenced the treatment. I ordered the eccoprotic mixture, in quantities sufficient to keep the bowels soluble ; and the tincture of iodine grs. xl. ʒi. gtt. v. to be taken three times a day. This was gradually increased, with but little promise of success, until he took 300 drops per diem, or gtt. 100, three times a day. At this time, symptoms of amendment displayed themselves, in the mildness of the night fits, and their diminished number. Flattered by this improvement, I continued the above mentioned quantity for about one month ; the system daily becoming less and less obnoxious to the disease, until, I am happy to say, every vestige of the complaint disappeared. From that time to the present, a period of five months, he has enjoyed uninterrupted health. In conclusion, permit me to add, instead of emaciating, as I had a right to expect, by a reduction of diet, and the medicines taken, he actually gained flesh.

3. *The use of Sulphate of Morphine in Ophthalmia.* By CHARLES A. LEE, M. D., New-York.—I have lately employed a solution of the sulphate of morphine, in cases of ophthalmia, with very beneficial results. The first case in which I used it, was one of acute conjunctival inflammation, attended with great intolerance of light.

with constant pain and itching. The relief was immediate, and no other wash was required. Every practitioner, who has had much experience in this class of diseases, knows the inefficacy of the lotions in general use. For the most part, by causing irritation, they do more harm than good. Even the aqueous solutions of opium, the most sedative of any in use, is liable to this objection, as is remarked by Francis, in his Synopsis.

The advantages which morphine possesses over all others, recommended for eye lotions, are too obvious to need pointing out. As a direct sedative, it allays all pain and irritation, and diminishes that distressing intolerance of light, which usually attends ophthalmic cases. My usual formula is the following :

Sulph. Morphine, gr. ij.
 Aquæ dist., ʒj.
 M. “

Some cases require a solution of greater strength, according to the severity of the symptoms. It should be applied tepid, and occasionally a cloth, dipped in the solution, may be kept applied to the eye. I cannot state, from my own experience, whether it will prove as useful in chronic as in acute cases, though, doubtless, it may be used advantageously to answer the same indications. From the atony of the vessels in these cases, stimulating lotions of the metallic salts will be indispensable.

4. *On the use of Stramonium, in certain cases.* By LEWIS BELDEN, M. D., *New-York*.—The following case, it is thought, may serve to show the use of stramonium, under certain circumstances, when administered in large doses, in the treatment of epilepsy. I visited, some months since, W. E. H., an interesting, sprightly, active little boy, aged about six years, of delicate habit and nervous temperament, partaking much of the peculiarities of his parents' constitution, particularly that of his mother. I found, on inquiry, that his disease was not recent in its commencement, but had, for a course of time, been gradually developing itself; the patient having, for a long time previous, been subject to very disturbed sleep at nights; and at times, on first falling asleep, to slight spasms; that in the progress of the formation of his disorder, the spasms had become more frequent, and occasionally occurring by day as well as by night, till at length his complaint had become pretty fully formed, as to its ordinary force and frequency. In the treatment of his case, after premising some evacuating medicine, the patient was put upon the use of the extract of stramonium in small doses, to be gradually increased and repeated at suitable intervals, and was continued until it had produced its constitutional effect on the system, manifested by dilatation of the pupil, indistinct and confused vision, virtiginous state of the head, and a certain

febrile irritation or excitement, peculiar to the use of this medicine. The result seemed at first to promise favorably, for a while at least; for the convulsions were diminished by degrees in force and frequency, and at length were suspended, for a time, altogether. This state, however, did not continue long, for the stramonium after a while appeared to have lost, in some measure, its salutary influence on the system; at all events, in the small doses in which it was administered. And after some further trial, without the desired success, it was thought best to suspend its use for a time, and resort to other remedies. It would be tedious, and perhaps of little utility, to enter into a detail of the treatment subsequently pursued, with an enumeration of the various medicines prescribed in the course of several months attendance. Suffice it to say, that a great number of the most approved remedies, usually esteemed valuable in this disease, were tried, and most, if not all of them, at first appeared to agree well with the patient, but soon ceased to have any decided beneficial effect, and on further use, to exert a contrary influence, by increasing irritation and excitement in the system. As the patient was a long while under treatment, and a frequent change of the remedies made, and not being visited a part of the time very steadily, the parents, from over solicitude, were induced, at the suggestion of friends, to use some few medicines recommended by their friends to them. Perhaps a little too much indulgence may have been yielded in this particular; for one or two of these did not agree very well with him. At length his disease, from its natural tendency, or from some other causes concurring, began to assume a very aggravated and alarming form; the convulsions becoming more severe, and with all, very frequent, say thirty or forty a day, and at times, a great many of them following each other in quick succession. There appeared to be strong determination to the brain, and his senses and mental faculties began to be much impaired. His bowels being habitually costive, and as this state of them was much increased by the increased determination to the head, he was directed to take of blue pill every night, to be worked off in the morning with suitable cathartic medicines. But it so happened, that the mother, having mistaken the box of stramonium pills for the one containing the blue pills, gave her little son, for several successive nights, a stramonium pill, instead of the blue pills. The stramonium pills had been made large, containing two and a half grains each of the best prepared extract of stramonium, that they might, when taken, be divided into several parts or portions, increasing or diminishing the dose, according as the circumstances of the case might require. The parents soon noticed that the effects produced on the lad was very different from what they had observed whenever he had taken the blue pill. According to their description of the case, he exhibited much of that wild, disturbed, and partially maniacal state, peculiar to an overdose of this medicine. The fits, however, soon became fewer and milder, and in the course of a few days, ceased altogether; and

there was not the least return of them for nearly a fortnight, and then the patient was but slightly affected. Occasionally he has, however, had returns of his complaint, mostly in the night, but milder than heretofore. Whenever the convulsions have recurred, the stramonium has been given to him in full dose, and has very soon arrested them. For some time past, he has had but very little of other medicine given to him, except at times the balsam of copaiba, in sufficient doses to keep his bowels soluble; and recently he has been taking along with it, with like intent, occasionally, the powdered charcoal. His bowels being naturally costive, his digestion weak, and his appetite, as is often the case in epileptic patients, craving, and sometimes ravenous, may, perhaps, sufficiently account for the tendency, in his case, of relapsing from time to time into his former state of disease.

In briefly reviewing the circumstances of the case of this epileptic boy, I am induced to believe that the large doses of stramonium, accidentally administered to him, in all probability preserved his life; or at all events, saved him from sinking into that mental imbecility so common to severe and inveterate cases of epilepsy. Heretofore I had never prescribed the medicine, only in small doses, often repeated, and gradually increased, until a certain effect was produced upon the system. This, I believe, is the received and general mode of exhibiting the stramonium for the cure of disease, or its palliation. But I am led to draw this practical inference from the case above recited, that in certain instances, a deviation from the common routine may be adopted with decisive advantage. The beneficial effects derived from exhibiting large doses of the milder preparations of mercury in severe cases of dysentery, especially in hot climates, where bilious and hepatic derangements prevail; the like favorable results, from promptly administering large quantities of quinine in that formidable and severe ataxic form of bilious fever, (often called the cold plague,) at times of frequent occurrence in the lower regions of the Mississippi; and again, the signal benefit resulting from giving extraordinary large doses of laudanum or opium in the collapsing state of delirium tremens, are too well known to require particular notice at this time. I remember having heard of a boy affected with tetanus, and his case being considered desperate, the attending physicians in consultation concluded to administer enough of laudanum to terminate at once his intense sufferings, but were happy to find that they speedily effected a cure, instead of killing their patient.

It is scarcely necessary to say to those who are anywise conversant in medical practice, that very different impressions, and very various effects and results take place, from prescribing medicine in large or minute quantities. As has been already mentioned, I had before only used the stramonium in small doses, but had been successful in curing several cases of convulsions; yet I am far from believing that small ones would have cured or relieved this

case. With regard to the right management of the medicine, it may here be proper to observe, that the convulsions may be expected to cease, when the stramonium produces its specific effect on the system; and that a good criterion of judging of this, is the dilatation of the pupil of the eye. I well recollect having treated successfully with the stramonium, some years since, a severe case of epilepsy, in which this state of the pupil was very fully induced. The patient had been growing better for some days under the use of the medicine; and the convulsions were at length entirely removed. At the time of which I am speaking, on visiting her one morning, she observed to the writer of this, smiling, that he had cured her fits, but she believed he had blinded her eyes, for she had been trying to read, but the letters appeared so confused and blurred, that she could not distinguish one from another. The like effect was produced in the following case, the relation of the circumstances of which may, perhaps, be of use in showing the powerfully controlling influence of the stramonium over epileptic disease. The patient, W. H., of adult age, had, as related by his mother, been subject, uninterruptedly, to fits, from the age of nineteen months, at which time his physician treated him for dropsy of the brain, terminating in hemiplegia, with a subsequent perished and crippled state of one side of him, and attended, from that time onward, with epileptic convulsions. In consequence of a secret incorrigible habit of his, he was sometimes seized with violent and aggravated attacks of his habitual epileptic affection. During one of these, it fell to my lot to treat his case, and after suitable depleting means, the stramonium was freely employed. The convulsions in a short time were wholly suspended, and according to the account of his mother, continued so, with the exception of one return of his complaint, for nearly three months; ordinarily he was subject to more or less of them every day. It may here, perhaps, be in order to suggest, that where the stramonium may have been successfully used in suspending the convulsions, the advantage obtained may require to be secured, by the timely exhibition of proper tonic and restorative medicines, or the employment of other appropriate means. Good sense and practical experience will best enable physicians in this particular to discriminate and prescribe for different and peculiar cases, as they may occur. In conclusion, I would very briefly observe, that where epilepsy is dependent on structural derangement, we cannot, perhaps, reasonably expect the stramonium to act further than as a palliative of disease; but in many cases, where no inherent difficulty of the like kind exists, we are somewhat disposed to think that, when judiciously administered, it is scarcely less efficacious in removing and suspending epileptic spasms, than the preparation of bark are, in arresting and suspending the paroxysms of intermittent fever. In certain cases, as has been suggested, where the disease has been suspended, suitable adjunct means may be required, to prevent a recurrence of the epileptic paroxysms. Time, experience,

and due attention to the subject, perhaps, may yet effect much towards a more successful treatment of a distressing malady, often considered, in many of its cases, very nearly allied to the *opprobria medicorum*; and any suggestions, therefore, tending to improve the practice for that purpose, will, doubtless, be favorably regarded by the medical profession.

5. *Report of the Meteorological Committee of the New-York County Medical Society, for the quarter ending Oct.1, being for July, Aug., and Sept., 1830.* By JOHN BAXTER, M. D., *Chairman.*—This quarter is one of heat and dryness, and has been remarkably so this year, although not in equal proportions. The greatest heat was in July, when the thermometer stood on the 21st at 100°, and there was in the same month, 4.01 inches of rain fell in 8 falls of rain, with but little electricity. In August, the thermometer was the highest on the 9th, when it stood at 94°, and rain fell 1.25 inches in 3 falls. On the 17th and 18th, a severe gale occurred along our whole coast, with the wind at N. E. changing to N. W., without rain or any great change in barometrical pressure. It was quite dry at the time. In September, the thermometer arose to the highest on the 7th, when it stood at 88°. This month there were but two falls of rain, the whole of which gave less than half an inch on a level, and the season was uncommonly dry. The quantity of electrical phenomena, that was exhibited through the whole quarter, was unusually small, although it is that portion of the year, in which we see it in its greatest profusion. The variation in the barometrical pressure, too, has been but small, the highest being but 30.4 inches, and the lowest, 29.7 making a change of but 7-10ths of an inch at the most. The whole quantity of rain fallen, was but 5.71 inches, with 13 rains the whole quarter, being but half the quantity which fell during the same time last year.

The hydrometer has indicated through the whole season great dryness.—We subjoin a summary table of the observations for the quarter:—

1830.		BAROMETER.				THERMOMETER.				RAIN.		WINDS.
		Max.	Min.	Diff.	Mean	Max.	Min.	Diff.	Mean.	Depth.	No.	
July	1st to 10th	30.30	29.75	.55	30.02½	88	60	28	74	2.20	3	N. W. & S. E.
	10 to 20	30.24	29.95	.39	30.14½	98	60	38	79	1.96	2	S. W. & N. E.
	20 to 31	30.23	29.87	.36	30.05	100	67	33	83½	0.85	3	N. E. & S. W.
August	1 to 10	30.2	29.78	.42	29.99	94	67	27	80½	0.60	1	S. W. & N. W.
	10 to 20	30.25	29.75	.50	30.	91	60	31	75½	0.18	1	N. W. & S. W.
	20 to 31	30.2	29.79	.41	29.99½	90	60	30	75	0.47	1	S. E. N. W. & S. W.
Septem.	1 to 10	30.23	29.88	.35	30.05½	88	57	31	72½	0.35	1	S. E. & N. W.
	10 to 20	30.34	29.96	.38	30.15	79	44	35	61½	0.00	0	N. W. & N. E.
	20 to 30	30.4	29.72	.68	30.06	79	45	34	62	0.10	1	S. S. E. & N. W.

Report of the Meteorological Committee, for the quarter ending January 1st, 1831, being for the months of October, November, and December.—This quarter has been the reverse of the last in some respects. The temperature has been mild for the season, and the quantity of rain fallen very large, but the changes in the barometer have been greater.

In October, the highest range of the thermometer was 76°, and the lowest 42°, the quantity of rain which fell, was 6.04 inches in 4 rains, the barometrical pressure did not exceed 30.4, and the lowest 29.7 making a change of only 7-10ths of an inch.

In November, the highest thermometrical range was 66°, and the lowest 39°; the quantity of rain which fell 6.67 inches in 5 rains, the barometer rising to 30.49, and not falling below 29.7, making a difference of 0.79.

In December, the thermometer rose to 60°, and fell to 12°, the quantity of rain which fell, 6.46 in 7 rains, and no snow. The barometer indicated a pressure of 30.5 inches, and fell as low as 29.3 inches, making a difference of half an inch.

The highest range of the thermometer for the quarter was 76° the lowest 12°. The whole quantity of rain which fell, was 19.17 inches in 16 rains, being nearly 4 times the quantity which fell last quarter, and double what fell the same quarter the last year. The barometrical pressure, except towards the latter part of it, was very equable.

1830.		BAROMETER.				THERMOMETER				RAIN		WINDS.
		Max.	Min.	Diff.	Mean.	Max.	Min.	Diff.	Mean.	in.	No.	
October	1 to 10	30.4	29.70	.34	29.87	76	44	32	1.6	3.44	1	N. E. & N. W.
	10 to 20	30.07	29.71	.36	29.89	70	47	23	58	2.60	3	N. E., E. & S. E.
	20 to 31	30.4	29.91	.49	30.15	67	42	25	54	0.09	0	S. E. & W.
Novem.	1 to 10	30.2	29.73	.47	29.96½	66	39	27	52	0.46	1	N. E., W. & N. W.
	10 to 20	30.3	29.89	.41	30.09½	65	45	20	55	3.01	1	N. E. & N. W.
	20 to 30	30.49	29.70	.79	30.09½	60	39	21	49½	3.20	3	N. E. & N. W.
Decem.	1 to 10	30.5	29.3	1.20	29.90	56	28	28	42	1.05	2	W. & N. W.
	10 to 20	30.36	29.46	.90	29.81	60	28	32	44	2.06	2	W. N. W. & N. E.
	20 to 31	30.46	29.42	1.04	29.94	60	12	48	36	3.35	3	N. W. & N. E.

We transfer with great pleasure, to the pages of our journal, the following able article, from the pen of our distinguished townsman, John P. Emmet, M. D. This gentleman already holds a high rank, which we are confident will be increased and extended by the industry and research he has now manifested. His Thesis gave early presage of a reputation which we think will reflect as much honor upon the institution to which he is attached, as it affords pleasure to his friends here to record every discovery which his talents may secure to his profession.

6. *Liriodendrine, or the Bitter Principle of the Liriodendron Tulipifera* ; Tulip Tree, or American Poplar. By JOHN P. EMMET, Professor of Chemistry and Materia Medica in the University of Virginia.—As this substance appears to have every claim to be considered a new and very well characterized proximate principle, and inasmuch as it exhibits no alkaline or acid properties, it will, in conformity with the prevailing practice, be described under the name of *liriodendrine*. The decoction made from the bark of the tulip tree yields an abundant precipitate upon the addition of aqua ammoniæ, the caustic fixed alkalies, or their carbonates, and, at the same time, the solution loses its intense bitterness. This circumstance induced me to examine, more particularly, the substance thrown down, and although the result has shown the absence of an organic alkali, it led me to the discovery of a substance, interesting not only for its medical properties, but for its chemical habitudes. The *liriodendrine* is indeed a very peculiar body, and it is not at all singular that hitherto it has passed for a resin. When not crystallized, but simply fused, the general resemblance is very great : but in its chemical properties it differs from every other substance with which I am acquainted.

The bark of the tulip tree, it is well known, has long been in use as a tonic and febrifuge, yet it must be admitted, that its administration hitherto has failed to secure to it the reputation of an uniform and active medicine. Without assigning to the *liriodendrine* more efficacy than exists in the bark itself, I am of opinion, that its properties will readily account for much of this want of uniformity. A temperature of about 270° Fahr. is sufficient to volatilize rapidly this bitter principle, and, at the same time, partly to decompose it. This circumstance struck me very forcibly before I succeeded in obtaining the *liriodendrine* crystallized. An infusion or decoction of the bark has a hot and very bitter taste, leaving an impression upon the tongue similar to that produced by the *canella alba* ; yet, when the solution is freely evaporated to dryness, these properties become so much impaired, that the residuary matter seems to be almost tasteless. Hence, so far from its being possible to form an extract from the *liriodendron tulipifera* by the usual process, it seems impracticable to boil the bark with water in covered vessels, without effecting the decomposition of the active principle.

Mode of preparing liriodendrine.—All the soluble salts, when added in sufficient quantity to saturate the aqueous solution of the bark, seem to occasion the precipitation of this substance ; but as it is rendered soluble by the presence of coloring matter, it will be more completely displaced by the addition of some active bases, as the alkalies and earths. The objection to the use of the former is that the pectic acid, which abounds in the fresh bark, forms gelatinous salts, which interfere with the subsequent filtration ; and when lime or magnesia is employed, it is difficult to effect a complete decomposition within the bark. The following I found to be

a much more convenient process. The bark is to be stripped from the roots, dried, and finely pulverized; it is then to be steeped for several hours in cold alcohol. The fluid, when saturated, is to be removed, and fresh portions added, until the bark becomes exhausted. By employing the alcohol hot, and straining forcibly through a strong cloth, this result will be accomplished, after three or four repetitions. The alcoholic solutions are next to be filtered, and transferred to a large retort, or alembic, and heated until at least two thirds of the fluid have been recovered by distillation. Towards the end of the process, the impure liriodendrine will separate, and collect at the bottom in large semi-fluid masses; it may be readily obtained by pouring out the contents of the vessel, and allowing the whole to cool. The remaining liquid is then to be gently evaporated in an open vessel, until it assumes the consistency of honey. The temperature should not exceed 200° F. This dark, resinous looking mass is to be incorporated with the portion which separates during the distillation, and then triturated with a warm solution of caustic potassa, soda, or aqua ammonia. The alkalis remove a large quantity of coloring matter, and the liriodendrine, being insoluble, separates, and may be brought together by a spatula. This treatment with caustic alkali must continue until the solution passes off colorless. The liriodendrine in this state has a drab color, (which becomes lighter by exposure to soft water,) and a waxy lustre. At a temperature of 30° or 40° it is hard and brittle, but softens in the hand, and bears a close resemblance to putty.

It appears, from an examination made upon a small scale, that the recent bark taken from the root, and dried at a temperature of 70° F., loses, by the repeated action of alcohol, (holding 11 per cent. of water, according to the centesimal alcohometer of Gay Lussac,) as much as 40 per cent. Of this amount, the liriodendrine composes more than 7 per cent.; but it was not easy to determine the exact proportion, inasmuch as the alkaline solutions always carry off a portion. I incline to believe that, on a large scale, it will be found more convenient to boil the impure tincture of the bark with calcined magnesia, until the fluid assumes an olive green color. It may then be concentrated by distillation, until it appears turbid, and in this state, when removed, and gradually mixed with cold water, (the fluids being agitated at each addition,) the liriodendrine readily precipitates as a white powder, or, by repose, will separate in the crystalline state.

The peculiarities of this substance prevent us from obtaining it crystallized from *hot* concentrated alcoholic solutions. In this particular, liriodendrine differs essentially from salicine, and the bitter vegetable principles hitherto described. If such a solution be examined with an eye glass, it will appear saturated with exceedingly minute globules of an olive-green color, but there will be no indications of crystallization, even after spontaneous evaporation; the liriodendrine merely separates as a transparent varnish: water

seems necessary for its crystallization, and in this state there is great reason for believing that it is a *hydrate*. The water, however, should be added gradually until the color of the solution becomes pearl white, and the temperature should be as low as 40° or 50° . The crystals obtained in this manner, and by spontaneous evaporation, are very pure; but always present different forms, among which may be observed triangular and rhomboidal plates, interspersed with plumose or stellated prisms; some of them are perfectly limpid, while others have the micaceous appearance of boracic acid. As the liriiodendrine may be washed with cold alkaline and acid solutions, without any loss, it is evident that it admits of complete purification.

The difference between liriiodendrine in its crystalline and fused states, is very striking; crystallized, it freely dissolves in alcohol, forming a *colorless solution*, which readily furnishes crystals by spontaneous evaporation, and without the necessity of adding water; when gently heated, the crystals fuse, slightly effervesce, (owing to the escape of water,) and then become olive colored, without any appearance of crystallization upon cooling. In the fused state, on the other hand, the alcoholic solution is always olive green, and scarcely gives any indication of a regularly formed deposition, unless the alcohol employed is dilute.

The alcoholic solutions of both varieties possess an intensely bitter taste, but always leave the impression of heat upon the tongue. Perhaps the combination of these properties may add to its value as an article of the *materia medica*; they seem at all events to be characteristic of the liriiodendrine in its purest state. The proper solvent for this substance is sulphuric ether.

In addition to the foregoing, it will here be proper to add the following remarks. Crystallized liriiodendrine is solid, brittle, and inodorous at 40° , fusible at 180° , and volatile at 270° F. When carefully heated in a glass tube, closed at one end, it gives off a white vapour, which condenses again, without signs of crystallization, and is the liriiodendrine unaltered. But it is impossible, even with the utmost care, to effect the complete sublimation of this substance. About one half of it remains, and appears to consist of a solid brittle resin. I could discover no trace of benzoic acid, or of ammonia in the sublimed portion, even when the temperature was raised so as to effect the decomposition of the liriiodendrine. The vapor is aromatic, and indicative of the plant.

Weak acid or alkaline solutions have no other effect upon this substance than to occasion its complete precipitation from dilute alcohol; but the case is quite different when the liriiodendrine is exposed to these bodies in a concentrated state. Thus,

Caustic potassa or soda, dissolved in a small quantity of water, and boiled with the crystals, appears to convert them into oxalic acid. In this respect, liriiodendrine differs materially from the resins.

Cold concentrated sulphuric acid dissolves, and at the same time,

decomposes it with the greatest facility, forming a yellow or orange red solution, according to the quantity employed. Upon diluting the acid, a white matter separates.

Cold concentrated nitric acid dissolves the crystals rapidly, without in the least discoloring them, and the solution is effected without the escape of any gaseous matter. The acid may be even gently evaporated, and the liriodendrine recovered without any material alteration. Boiling the acid produces complete decomposition, and a yellow, resinous matter remains.

Cold concentrated muriatic acid has little or no action ; but when heated, the liriodendrine effervesces, and assumes a deep emerald green color. A small portion, however, seems to escape decomposition, and may be precipitated from the acid by the addition of water.

Iodine, in substance, almost immediately imparts to the crystals a bright chrome yellow color, and, in the end, forms an insoluble matter, which retains a grass green color, after all the excess of iodine has been removed by a gentle heat. This is, no doubt, a definite compound ; for it assumes its original yellow tint when water or alcohol is added. In this state, also, the liriodendrine is scarcely soluble in alcohol. Although the color produced by iodine is not so intense as that resulting from the action of the same substance upon boiled starch, it appears to be no less characteristic of small quantities ; for, notwithstanding the almost complete insolubility of the liriodendrine in cold water, if a particle of the iodine be placed upon the surface of this very weak solution, it very soon becomes surrounded by an opaque yellow film. This compound is immediately decomposed by nitric acid, which liberates the iodine and dissolves the liriodendrine.

Chlorine and bromine produced no marked effects upon this bitter principle. Both in its fused and crystallized state, it is heavier than water, at the ordinary temperature ; but as the fluid approaches the boiling point, it floats upon the surface.

When the crystals are thrown upon a burning coal, they melt and volatilize in an instant, without undergoing combustion ; but when touched by a fragment of warm, spongy platinum, they become absorbed, and then may be kindled by a candle ; they burn with a brilliant white flame, giving much soot, like resins and oils.

When liriodendrine is fused, it bears a close resemblance to a soft resin ; in this state, also, it seems to be incapable of crystallizing ; but its volatility, very low point of fusion, incapacity to unite without decomposition with the alkalis, extremely bitter taste, and the definite combination which it seems capable of forming with water, all exhibit a very marked difference between it and any resin with which we are acquainted. I attempted, in vain, to form a crystalline hydrate of common resin, (it always separated in transparent globules,) and, as we have no satisfactory evidence that resins ever occur crystallized, this condition of the lirioden-

drine may be regarded as alone sufficiently distinctive. It is true that M. Pelletier states his having seen the balsam of copaiba in a crystalline form; but the article, besides being of a compound nature, was at least thirty years old at the time of observation.

To conclude, I may observe, that the properties of *liriodendrine* seem to place it with camphor, as a connecting link between the resins and volatile oils.—*Journal of the Philadelphia College of Pharmacy, for April, 1831.*

MISCELLANEOUS.

As ophthalmia is now prevalent in the New-York Alms-House, we lay before our readers the subjoined extract from the Medico-Chirurgical Review.

Contagious Ophthalmia.—This disease has attracted great attention. We shall endeavor to be as brief with it as possible. It is essentially the same with the catarrhal ophthalmia, but much more severe, and excited by contagion, perhaps by infection.

Symptoms. Their order and severity vary in different individuals suffering at the same time, in the same place, and from the same infection. The disease is said to be milder in women than in men; it is more severe as the age is near to puberty; in scrofulous persons it is always tedious, and more likely to destroy the eye. The disease is much more virulent at one period of its occurrence than another; it was worse at the Military Asylum in 1809, than in 1804. The purely inflammatory stage of the disease is often shorter than thirty hours, never surpasses it, purulent matter being then formed. Sometimes the inflammatory stage is so short and rapid as not to come under the notice of the surgeon. The disease appears to commence soon after the application of the contagious or infectious matter to the conjunctiva, but in many cases secretion of purulent matter has taken place before the patient is aware that he has any inflammation. The *healthy* individuals of any community likely to be infected should be examined daily. The right eye is more frequently and severely affected than the left: commonly both are attacked, at an interval of several days. When the symptoms succeed each other with moderate rapidity they occur in the following order.

“A considerable degree of itching is first felt in the evening, or suddenly there arises in the eye the feeling as if a particle of dust were between the lids and the eyeball. This is succeeded by a sticking together of the lids, principally complained of by the patient in awaking in the morning. The eyelids appear fuller externally than they ought to do. Their internal surface is inflamed,

being tumefied and highly vascular; and the semilunar membrane and caruncula lachrymalis considerably enlarged and redder than usual. The swelling of these parts is soft, somewhat elastic, slippery, and easily excited to bleed.

“In about twenty-four hours after the first symptoms make their appearance, the mucous discharge from the internal surface of each eyelid is considerable in quantity. It is still thin, but somewhat viscid, and begins to be opaque. It lodges at the inner angle of the eye. On everting the lids, their internal surface is observed to be much more vascular and tumid. There is also epiphora present, especially when the patient exposes his eye to a current of air. He complains of a sensation as if the eye were full of sand, but seems to experience but little uneasiness from the light. Not unfrequently, a considerable discharge of blood takes place from the conjunctiva, after which the swelling of the membrane diminishes for a time. This is sometimes repeated several times before the profuse puriform discharge sets in. It does not appear to arise from the rupture of vessels, but rather to come from the exhalents of the conjunctiva, dilated by red blood, or by a mixture of red blood with the transparent fluid which they usually carry.

The inflammation now extends to the whole internal surface of the eyelids. The secretion from the palpebral conjunctiva is much augmented, and becomes more distinctly puriform, being yellowish and thick. In many cases it is so abundant, that on the patient opening his eyes, the matter instantly flows over the cheeks. It irritates the skin, and even excoriates it. The swelling of the conjunctiva of the lids, and especially of the upper, increases with the discharge; partly from a serous effusion immediately under the membrane, partly from an unnatural and inflammatory development of its vascular structure, partly from a similar enlargement of its mucous cryptæ, and of the Meibomian follicles, giving rise to a sarcomatous appearance of the internal surface of the eye-lids.”

The disease may proceed no further, remain stationary for weeks, or even months, and then gradually subside. In other cases the inflammation spreads rapidly to the conjunctiva of the eye-ball, small spots from extravasation of blood are sometimes observed, and chemosis is established. Sometimes the chemosis is only partial; but commonly it gradually spreads from the lids over the surface of the eye towards the cornea, which at last it buries. The chemosis is accompanied by redness and swelling of the skin of the eye-lids, sometimes coming on suddenly, and attaining its height in a few hours, at others increasing gradually during several days. This sudden swelling renders the lids quite immoveable, occasioning at first inversion, afterwards eversion, especially of the lower. The sensations amount to little more than a sense of weight and stiffness, with little pain if light be excluded. When the conjunctiva of the eye-ball has become affected, the puriform discharge is greatly increased, but it varies in quantity and quality. It may

continue with little change for twelve or fourteen days, the conjunctiva of the eye-ball becoming, in the mean time, sarcomatous, though never to the same extent as the palpebral. At length the disease begins to yield, but not unfrequently the internal surface of the lids remains in a sarcomatous state, and excites or maintains a chronic inflammation of the investing membrane of the cornea. This is a tolerably favourable case.

Sometimes the conjunctiva covering the cornea is thickened, and in some degree detached. Superficial ulceration sometimes attacks the cornea, giving rise to opaque cicatrices, and opposite the ulcerated part the iris sometimes adheres, or the whole substance of the cornea, and even the internal textures of the eye may be affected. There is then deep-seated pulsative pain in the eye, sometimes in paroxysms, sometimes uninterrupted. This pain is often very violent, and its characters vary in various cases, but it chiefly affects the branches of the fifth pair of nerves. The duration of the paroxysm varies; it appears to come on most frequently from 10 to 12 in the evening. During the pain the secretion of tears is more copious, and the purulent discharge almost uniformly diminished. It is only in the most violent form of the disease that frequent paroxysms of pain are met with. Rupture of the cornea frequently takes place under these circumstances, and staphyloma, with loss of sight, almost invariably follow.

“The period at which this happens varies exceedingly in different patients. In some the daily occurrence of these paroxysms has continued for a number of weeks before rupture of the cornea is produced. In others this is effected under the second or third attack, and gives a temporary relief. I say *temporary*, for even this melancholy event does not afford a termination to the disease, and often scarcely checks its progress. The severe pain is seldom present in both eyes at the same time, and although it occasionally happens that the attacks of pain alternate from the one eye to the other, the rupture of the one is generally produced before the severe pain affects the other. In some cases, where both eyes are destroyed by rupture of the cornea, the patient has no recurrence of the pain for some time after the rupture of the first; while, in other cases, the pain almost instantaneously shifts to the other eye. It has been known, that while the second eye was suffering rupture of the cornea, the first eye, by cicatrizing, was only becoming liable to the same accident again, and this second rupture of the cornea has been preceded by as much pain as was the first.”

Rupture of the cornea generally happens when the disease is at its height; the process is one of sloughing and ulceration. Through the opening, or openings, the still clear lens is sometimes seen lying in its capsule, and the internal parts of the eye appear natural. The iris is pushed forward into the opening or openings it adheres, and partial or total staphyloma is the result. In certain cases it would seem that rupture of the cornea takes place under one of the violent paroxysms of pain, before it has undergone much disorgani-

zation. In such a case, related by Dr. Vetch, the aqueous humour escaped by a division of the cornea nearly as clean as if made by a knife. But Mr. Mackenzie believes that this mode of rupture is very rare. Ulceration of the cornea commencing on its surface is one mode by which it is destroyed; infiltration of matter into its substance is another, and the most frequent. In many cases the disease does not cease with the bursting of the cornea. The capsule of the lens soon ulcerates, and the lens escapes; more or less of the vitreous humour follows; and sometimes almost the whole contents of the eye-balls are evacuated, a small and deformed one being left sunk in the socket.

The external symptoms of the disease, and the pain, cease at very uncertain periods. The external tumefaction of the lids usually disappears first, and then the chemosis. The lids have still a gaping relaxed appearance, and secrete a little matter. In this state, which may continue for months, there is great liability to relapse, and the patient is capable of infecting others. The opacities of the cornea are sometimes removed with surprising rapidity. The enlarged and indurated state of the mucous follicles of the palpebral conjunctiva, and of the Meibomian follicles, and the vascular and nebulous state of the cornea, are, in many cases, the latest symptoms to disappear. Mr. Mackenzie quarrels altogether with the term "granular conjunctiva." He says that the granular prominences in question appear to be chiefly the acini of the Meibomian glands enlarged.

Constitutional Symptoms. The early stage of this disease is entirely local, but afterwards fever is established. At last there is always much general uneasiness, and sleep is prevented by the paroxysms of nocturnal pain. Great debility comes on; and in Egypt the disease often ended in diarrhœa or dysentery, and sometimes in hectic.

Causes. A prominent point to determine is the contagiousness of the disease, or its power of propagation from one person to another. The return of the Egyptian expedition certainly introduced a severe contagious ophthalmia into this country, which afterwards prevailed extensively in regiments that had never served in Egypt, and which accompanied the British troops to almost every foreign station to which they were sent. Of the contagiousness of the malady we need scarcely furnish instances, after what has been recorded on the subject by Dr. Vetch, Sir Patrick Macgregor, and others. We are really sorry that we have not space for the account of a fearful ophthalmia which prevailed in the slave ship *Rôdeur*, and has been described by M. Guillié. Of 160 negroes 39 remained totally blind, 12 lost each one eye, and 14 had specks, more or less considerable, of the cornea. Of the crew of 22 men, 12 lost their sight, amongst them the surgeon; 5 lost each one eye, and amongst them the captain; 4 had considerable specks and adhesions of the iris to the cornea. One man only remained unaffected, to manage the vessel, and he was seized with the ophthalmia three days after arriving at Guadaloupe.

Treatment. If employed early, the treatment recommended for catarrhal ophthalmia may generally check the disease. If it be more advanced, and especially if chemosis be present, blood-letting to syncope, followed within two hours by leeches, will be necessary. The leeches ought not to be placed upon the lids, especially if the integuments are swollen and red, as the bites are apt to fester. We think the following remarks too judicious in the present days of venesection, to be passed unnoticed.

“We ought neither to delay the abstraction of blood, if the symptoms are smart, and the case of some days’ standing; nor ought we, on the other hand, to indulge in the absurd expectation that profuse blood-letting is to check the disease completely, without the use of local applications. I hold any notions of this kind, which some may have entertained, as crude and irrational, and their practice as perhaps the most destructive which could be followed. By very profuse blood-letting, the patient is too much reduced, and the eye rendered more susceptible of disorganization. We must not for a moment indulge in the fancy that the stream of blood is to be allowed to flow till the redness of the eye fades under our view, nor are we even to make the cessation of pain in the eye the condition for stopping the bleeding. These effects might not be obtained by abstracting 50 or 60 ounces of blood, whereas the same real benefit will follow in the course of an hour or two, if not more than 20 or 30 be taken, the patient will be less debilitated, and the course of the disease will with greater certainty be abridged.

“Bleeding from the arm may with propriety be repeated, if, in the course of 24 or 36 hours after the first venesection, the symptoms have not abated, or have increased in severity. Afterwards, also, should there be any signs of a renewal of inflammatory action, more blood is to be taken away. It is chiefly in cases where there is pulsative pain in the eyeball, and circumorbital pain, coming on in nocturnal paroxysms, that repeated general blood-letting is necessary.”

Mr. Mackenzie speaks highly of scarification of the conjunctiva; it may be repeated every second or third day. The antiphlogistic regimen, and a dark, well ventilated room, are absolutely necessary. Purgatives are useful in all cases, and especially the emeto-purgatives, as tartar emetic with sulphate of magnesia. Diaphoretics are useful as soon as the active inflammation is subdued. Calomel and opium are of the highest benefit, next to copious venesection, in severe cases, attended with nocturnal circumorbital pain. Bark and other tonics are only useful in the chronic stage.

The local treatment is of no mean importance, and paradoxical as it may appear, it should be alternately soothing and stimulating; either plan too exclusively employed will destroy the eye. It is of great importance that the eye should be frequently cleaned, which is best accomplished by syringing into it with some force a tepid solution of one grain of the oxymuriate in eight ounces of water.

Our author decidedly condemns sugar of lead, and sulphate of zinc injections. We do not share his horror of them. He prefers greatly the solution of the nitrate of silver, of the strength of about four grains to the ounce. If it fail, a solution of six grains of the sulphate of copper in an ounce of water, may be substituted for it as an injection. The red precipitate ointment, or the citrine rubbed along the edges of the lids at bed-time, answer best in preventing them from adhering. Blisters on the nucha, or behind the ears, ought always to be employed. Much relief is sometimes obtained from allowing the steam of hot water, with laudanum, to rise into the eyes, or from fomenting them with warm decoction of poppy-heads. Rubbing the head with warm laudanum when the circumorbital pain threatens to commence, is also highly useful. Evacuation of the aqueous humour has been employed with the view of relieving the severe pain in the eye and head, and preventing bursting of the cornea. Our author conceives that it will seldom be required, if the remedies already recommended be had recourse to. When the purulent discharge is gone, the vinum opii proves an excellent application to the relaxed conjunctiva.

Preventive measures are of the highest consequence, especially to military surgeons. If troops be sent to countries where this disease prevails, let them guard against the exciting causes of catarrhal ophthalmia. Soldiers on guard, or at bivouac, should cover their heads well during the night, and in moist or cold situations, should avoid currents of air as much as possible. As soon as there is any appearance of puro-mucous ophthalmia in a regiment, the medical officers should institute a daily and minute inspection of every individual belonging to it. Those affected should immediately be separated from the rest, and not be allowed to rejoin their companies till perfectly cured. Excessive crowding of the men together, especially in their dormitories, should be carefully avoided. The affected should be acquainted with the contagious nature of the disease, and warned against the modes in which it is likely to be communicated. Barrack towels should be entirely laid aside. It will be found salutary to parade the men frequently in their respective companies, with separate vessels of water, while an officer sees their faces and eyes carefully washed.—*Med. Chir. Review, April 1, 1831.*

8. *The Cholera in Moscow, in a Letter from a Correspondent there.*—The news of the disease having shown itself on the Russian frontier, bordering on Persia, last year, attracted little attention. When, however, we were informed that the disease, after ravaging Tabris, the seat of the Persian government, had spread to Teflis, the capital of Georgia, and thence to Orenburgh, and its government, Astracan, and, following the course of the Volga, leaving the colony of Sarepta untouched, (who are said to have saved themselves by a strict observance of orders, cutting off all communication without

the city,) had got to Saratoff, we began to think that it might visit us, which, as I have already informed you in my last, proved but too true. The disease showed itself unequivocally, though sporadically, from the 12-24th to the 15-27th September last, and is pretty generally believed to have been imported from Saratoff, or the fair of Nishney Novogorod, though this is a subject which has not yet been sufficiently investigated, but shall be, if God spare me, as soon as I can command leisure. From this time it gradually, but not slowly, increased, showed a strongly-marked epidemic character, particularly affecting the lower classes of people, the ill-fed, ill-clothed, living in low and damp houses or cellars, and whose habits of intemperance, and carelessness of health, predisposed them to the action of the efficient cause, whatever that may be. About the 14-26th October, there were, by the public accounts, 1066 sick of cholera; and on that day 244 were seized with the disease. It seems then to have been at its acme, and from that time has gradually declined. The number taken ill two or three days ago, amounts to sixteen or seventeen daily; in consequence of this diminution, several of the public temporary hospitals have been shut up, and several others, of which that I have had the charge of is one, have not received patients for these last ten or twelve days. On the 5-17th November, the public accounts stood thus. From the appearance of the complaint till that day, were affected with cholera 6531, recovered 1813, died 3508, remained sick 1210. The total number affected with the disease by the latest statement, December 7-19th, amounts to 7000, of whom more than 4000 died. About the time the complaint appeared in Moscow, the government thought it necessary to intercept all direct communication with the town; and no one was allowed to leave the city, or come into it without observing quarantine. The working classes, to a considerable amount, were sent off to their villages, and many of the nobility left the city altogether, so that the population was considerably reduced.

The city is divided into twenty divisions, in each of which a temporary hospital was provided as quickly as might be; a medical council was formed, which met daily, and frequently twice a day, at the general governor's residence; and its members was formed principally from the inspectors of the hospitals, each of whom had under his charge or inspection several young surgeons and students. By the orders of the minister of the interior, about sixty medical men were drawn from Moscow for the service of the interior before the complaint began, so that the inspectors had all the responsibility, and a great deal of the anxiety and fatigue on their shoulders; and among others I was one, since all the young men that assisted me had seen but very little practice, and, of course, were but little fitted to take charge of such cases, and such a disease, as we had to do with. There were, in consequence, constant and strong calls on us, both in the way of duty and humanity. In every quarter there is a police station, where some medical men are in attendance: and

strict orders were issued, that, so soon as any one was taken ill in the quarter, information should be immediately sent to the police station, whence a medical man was immediately sent to examine, and make his report ; when symptoms of cholera appeared, he either immediately prescribed, or bled the patient, or, what we afterwards, in our quarter at least, found better, despatched him in a carriage with four horses, which stood yoked day and night, and conveyed him straight to the hospital. In this way, as little time was lost as possible. From one cause or other, however, partly the ignorance and indifference of the lower classes, partly their dislike to the hospital and carriage, &c. we never got patients to the hospital of which I had charge, sooner than six hours after the commencement of the disease, seldom so few as eight, and most frequently ten, twelve, eighteen, or more. In this manner two patients never entered the hospital, but died in the carriage that brought them, eleven before any medical assistance could be given them, and a great many in three hours, sometimes more, sometimes less. After they were brought to us, several died in the warm bath, one of the first remedies we used ; indeed, a very great number were in such a state, as to be out of the reach of medicine, being half dead, and without pulse at the wrist.

Under these and other disadvantages, such as the great press of business, the distance of the hospital from my house and from the apothecary's shop, and the time lost between the prescription and the exhibition of the medicine, it is no wonder, that in so rapid and formidable a disease as the Indian cholera, which it undoubtedly is, I should only have been able to save 56 out of 164, the number brought to us dead, dying, and very ill. We had no slight cases, though a *few* where the disease was less distinctly marked ; and some, where, the characteristic symptoms being quieted, the complaint appeared under the form of continued fever, with biliary irritation and derangement in the secretion of the bile.

I had studied what the Indian writers had written on cholera, as far as my library afforded me the means, and, through the Edinburgh Medical and Surgical Journal, knew their practice ; but my notions on the disease were chiefly drawn from my own experience in bilious cholera, and the close study, for the greatest part of my life, of the diseases of the digestive organs. I adopted the pathological views of this disease, given by Dr. Ayre, in his practical work on the disorders called bilious, which were confirmed by the perusal of that part of Dr. James Johnson's work on diseases of tropical climates, relating to this disease, which I received about this time from England by Mr. Harvey. I determined, however, to act with caution, as having to do with a formidable foe, and to judge for myself, unbiassed by any one, and trusting to my own knowledge and practical experience ; and as bleeding had been so much recommended by the Indian writers, I thought it right to try it in three cases, all of whom died. Two were strong men. One, however, though naturally strong, enjoyed but indifferent health ;

the other two were bled under unfavourable circumstances, so that all the conclusion I could draw from these was, that, under such or similar circumstances, bleeding was likely to do more harm than good; and as at this period of the epidemic, the surgeons at the police were in the habit of bleeding almost every one they were sent to, I found it necessary to put a stop to such indiscriminate practice. Local bleeding I frequently found useful, and general bleeding, in one case particularly, was of great use in the course of this disease, where it had the appearance of abdominal inflammation; in another, a bleeding, employed early in the disease, and done effectually, that is, fourteen or sixteen ounces taken from the arm, followed by magnesia and rhubarb, cut short the complaint, which the patient, one of the young men of the establishment, had temporized with by using opium and oil of peppermint. The third day after the bleeding, he was at his duty again, and has remained well since.

Founding my practice on the pathological views which I have alluded to, I used a modified Indian practice, seeing clearly that unless I could make some strong impression on my patients at the first, the exhibition of medicine was in vain. A *medicina expectans* in such a state of things, is worse than trifling; and having frequently experienced the good effects of twenty grain doses of calomel in high excitement of the frame, I had no fear of giving such a dose to those who had no pulse at the wrist, so that my invariable practice was at first, till we got a vapour-bath fitted up, to strip the patient so soon as he was brought to the hospital, and put him, cold and shrunk, into the warm-bath, of which the temperature was gradually increased as high as he could well bear. The bath was made more stimulating, by adding a large proportion of common salt. While the bath was getting ready, we administered a glass of good brandy-punch; and when in the bath, watching a favorable moment when we thought the stomach was least likely to reject it, gave him twenty grains of calomel, mixed with as much gum-arabic, and washed it down, as the Indians do, by from ten to twenty drops of oil of peppermint, mixed with an ounce and a half of pure water, and in general, forty drops of laudanum of the Edinburgh Pharmacopœia, or instead of this, the calomel was washed down by a table-spoonful of cogniac, and forty drops of laudanum, according to circumstances. This, or a diminished dose, was repeated, according to circumstances, a few hours afterwards. I rarely had occasion to give a third dose, as by the time we would have given it, the patient either showed morbid symptoms, or an abatement of the more urgent ones. It was then that I employed, what I consider a very essential part of the treatment of this disease, the regular and free, but prudent use of purgatives, so as to follow up and assist the effects which I suppose to have been produced on the digestive organs, by the calomel already given for this purpose. I have sometimes given an emulsion, with castor-oil and laudanum; but having found it often returned by vomiting, I generally used an

infusion of senna, with manna and Epsom salts, unless where I feared inflammation; and in such cases, I preferred the emulsion with castor oil; in other cases these, though taken in free doses, were not sufficient to open the gall-ducts, so that I was forced to use something more stimulating, such as pills of rhubarb with calomel, or the compound extract of colocynth of Reuss's Pharmacopœia with calomel. By the use of one or other of these medicines, I commonly succeeded in procuring a free flow of morbid bile from the liver and gall bladder, which I believed, and found by experience, to be the surest key to unlock the disease; for I lost no patient (excepting one where an infusion of senna was given injudiciously, and by mistake) in whom I succeeded in procuring a free biliary discharge by stool once. The watery stools and vomiting subdued, they never returned, unless the patient had a relapse by his own imprudence in eating. One of our young students, who entered on his office in bad health, was seized with the disease. By active treatment and great care, I left him in bed at the hospital at ten at night out of danger, after having been two days very ill. The next morning, on visiting him, I found him without pulse. On inquiry as to the cause of this sudden, and hitherto inexperienced change, I was informed that, feeling himself disposed to eat soon after I left him the preceding evening, he had eat freely of some soup, and a fowl of which it was made. The quantity he took was more than his stomach could bear; brought on vomiting and purging, and such a collapse of the vital powers, as defied all medicine. He sunk, in spite of all my efforts to save him. This is not a solitary case. I am making preparations to try the effects of galvanism, electricity, and the protoxide of azote, or a considerable proportion of oxygen with atmospheric air. It appears to me probable that the primary impression of the poison which produces the disease, is made through the organs of respiration on the blood itself, which appears to me to be unduly carbonized, and hence unfitted for the natural excitement of the nervous and muscular organs. Hence the morbid symptoms of diminished irritability of the heart, and undue influence of the brain on the muscles in general, as well as the torpor of the senses.

The *cordon sanative* has been removed thirty versts from Moscow.

Dec. 7—19th. By the last accounts, the number affected with cholera exceeds 7000, and the number of deaths above 4000.—*Edin. Med. and Surg. Journal*, for April, 1831.

9. *Fracas at the London College of Surgeons.*—The London Sun gives the following description of a conflict which took place on the 8th of March in the theatre of the College of Surgeons, between the members of the College and the police officers, acting by request of the Council:

The most extraordinary scene took place yesterday in the Royal College of Surgeons that ever occurred there, and probably one of the most violent measures adopted, and a greater stretch of authority resorted to by the President and Council of the College against the respectable members of their body, than was ever recorded of the ruling authorities of any corporate body whatever. The circumstances were these :—A short time ago an order was issued by the Lords of the Admiralty, excluding from attendance at the Levees the Surgeons and assistant-Surgeons of his Majesty's Navy, which has given very great offence to the members of the profession at large, more particularly as it has subsequently been intimated, that at no very distant period the army surgeons are to meet with the same fate. On the 14th of last month, just before the annual Hunterian oration was delivered in the theatre of the Royal College of Surgeons, the members met, and passed unanimously two resolutions; one to the effect of deeply deploring that such an order had been issued, and the other that the president and council should be requested to petition the Lords of the Admiralty that the order might be wholly and immediately rescinded. The latter resolution was delivered to the president in the theatre, who pledged himself to lay it before the council at their first formal meeting for the disposal of business. A few days ago an answer was returned to the members that the council could not act upon the resolution, "on the ground of irregularity." This answer greatly incensed the members. At this season of the year a course of lectures is delivered in the theatre. The tickets of admission to the members state that the doors shall be opened at three o'clock, and that the lectures are to be delivered on Tuesdays, Thursdays, and Saturdays, at four o'clock. Mr. Wakley announced in the *Lancet* of last week, the answer returned to the members by the council, and invited the members to meet in the theatre yesterday as soon as the doors should be opened, to discuss the propriety (before the time for the lecture to begin) of petitioning either the Lords of the Admiralty, or the Lord Chamberlain, for a redress of the grievance of which they complained. The council, on learning this, published circulars, and sent them to the members, saying, that on Tuesday the doors should not be opened till a quarter before four, and that they were determined to use every possible effort for the purpose of preventing the members publicly discussing the subject they complained of, or, indeed, discussing any other subject in the theatre. In furtherance of this determination, the Council procured a party of the most powerful bodied Bow-street police, and had them in attendance. As soon as the doors were opened, the theatre was crowded to the utmost excess in every corner instantaneously. Immediately cries for a chairman were raised, and that as the Council had insulted the members by attempting to prevent the discussion, the discussion should take place, and that there should be no lecture. In the midst of the confusion, the President, followed by the lecturer, many of the Council, and their solicitor,

took their stand upon the floor of the theatre. The members called out from every part of the theatre that no lecture should take place, nor should any of the council be heard, until they had concluded their discussions. The Bow-street officers were then called in, which doubly infuriated the members. They were directed to take Mr. Wakley out of the theatre by the President. They advanced to him, and he was immediately clung to by scores of the Members, who unanimously declared with himself that he should not go out, neither should one of the members be removed from their own theatre until the utmost violence was resorted to. The officers, on this, refused to lay their hands on any of the members, and withdrew. Efforts were again made by the President and the Council to obtain a hearing for the Lecture, but all proved ineffectual. They then left, amidst groans and cheers. Silence having now been obtained, one of the members was elected chairman, and Mr. Wakley addressed the meeting on the subject of the order of exclusion already alluded to. One or two other gentlemen spoke; and a resolution having been passed unanimously, that a petition should be presented by them to the proper quarter, praying for the abolition of the order, the Secretary of the Council was sent to Mr. Wakley, who put a paper into his hand, requiring him, by order of the Council, to leave the theatre. Mr. Wakley refused to go. The Secretary immediately afterwards exhibited a placard, calling upon the members to quit the theatre, which only added fuel to the fire. The Bow-street officers having got an indemnity from the Council and their solicitor, for any consequences that might follow their interference, (without which they refused to act,) rushed towards Mr. Wakley and some others, brandishing their staves, and seizing those gentlemen in the most violent and outrageous manner. Having refused to go out a general scuffle followed, when the officers, and an immense number of gentlemen, tumbled headlong from the body to the floor of the theatre. Mr. Wakley's clothes were literally torn to ribbons; his coat, waistcoat and shirt, were reduced to actual rags. As soon as he was conveyed to the outside of the door, he was released, the officers saying they had no charge against him, and he at once gave the last who had hold of him into the custody of a new police man, who happened to be passing near the College at the time. Soon afterwards all the members left the theatre, but subsequently Mr. Wakley appeared at the public office at Bow-street, to prefer his charge against the officers for assaulting him. In the end (the Magistrates all three being on the bench) refused to hold the officers to bail, but left Mr. Wakley to indict them at the next Sessions, undertaking that the officers should be then forthcoming to meet the charge. The officers stated to the Magistrates, that during the time the examinations were going on, there were from 200 to 300 surgeons surrounding the office door, and that there could not have been less than from 500 to 700 in the theatre. This will, of course, bring to issue a legal decision on the question whether the theatre belongs to the Members, or to the Council, exclusively of the College.

FIRST QUARTER'S REPORT OF INTERMENTS in the City and County of New-York, commencing on the first day of January, and ending on the thirty-first day of March, 1831; showing the ages, sexes, and diseases of the persons who died.

[illegible]

N. B. The total number of colored persons that died, and included in the above, is 188; 44 of those died of consumption.

ISAAC WARREN, *City Inspector.*

UNIVERSITY REGISTER.

THE annual commencement of the College of Physicians and Surgeons in this city, was held on Tuesday, the 5th of April.

Dr. John Aug. Smith, the President of the college, officiated on the occasion, and conferred the degree of Doctor of Medicine, on the following gentlemen.—After the degrees had been conferred, a highly interesting Memoir of the Life and Character of the late President of the College, Dr. Watts, by Dr. Samuel W. Moore, was read by Dr. Willet; Dr. Moore being prevented by indisposition from appearing in person to perform that duty. This memoir was introduced and made applicable to the occasion, by some appropriate prefatory remarks, addressed especially to the graduates, in which the writer pointed out the nature and extent of duties and responsibilities which they were about to assume; recommending to them the propriety of keeping always in view, as objects worthy of their imitation, the character of such men, as had by their virtuous lives, no less than by their talents and learning, rendered themselves ornaments to their profession, and blessings to the community.

George S. Armstrong, Laryngitis.

William Baxter, A. B., Purulent Ophthalmia.

William S. Baker, A. B., Different appearances presented by the Tongue in different Diseases.

William Bayard, Erysipelas.

James Jeffrey Brownlee, Tetanus.

Robert S. Bullus, A. B., Amaurosis.

Alonzo Caulkins, A. M., Materialism.

John Collett, Scarlatina.

James Deane, Physiology of Digestion.

James C. Fisher, A. M., Physiology of Absorption.

Ellis B. Freeman, A. M., Dysentery.

Adams B. Gidney, Bilious Colic.

James Harcourt, Small Pox.

T. Russ Hibbard, Cholera Infantum.

- Edward T. Hitchcock, Chronic Intermittent Fever.
 Henry Holmes, M. D., *Vis Medicatrix Naturæ*.
 Joseph Howard, Jun., Intermittent Fever.
 Lewis Lane, Trachitis.
 John Law, A. B., Trachitis.
 John B. M'Ewen, Influence of Climate on Pulmonary Disease,
 with a particular reference to St. Augustine.
 J. Havens Munsell, Hepatitis.
 Garrit V. Z. Platt, Surgical Anatomy of the Arch of the Aorta.
 William J. Powell, Opium.
 Alfred S. Purdy, Purulent Ophthalmia.
 Benjamin A. Rousseau, Delirium Tremens.
 John Schermerhorn, Jun., Erysipelas.
 John Robert Van Kleck, Conversion of Diseases.
 Samuel D. Wilson, Thyroid Gland.
 George H. White, Bronchitis.

COLUMBIAN COLLEGE.

MEDICAL DEPARTMENT.

The annual commencement in this institution took place on the 9th inst., and the following gentleman, who had previously passed a private examination, and defended the thesis upon the subjects annexed to their respective names, received the degree of Doctor of Medicine.

James Waring of Maryland, on the Effects produced by drinking Cold Water in warm weather.

Benjamin B. Edmonson of Maryland, on Tubercles.

Albert C. Thayer of Maine, on Lymosis Dyspepsia.

Francis M. Weems of Virginia, on Apoplexy.

John W. Graves of Massachusetts, on Trachitis.

Abel W. Kingman of Massachusetts, on Amenorrhœa.

Thomas S. Waters of District of Columbia, on Auscultation, and Percussion in Diseases of the Chest.

Richard S. Foote of Virginia, on Convulus Panduratus.

Philip Smith of Ireland, on Neuralgia.

James P. Quin of Ireland, on Fever.

UNIVERSITY OF MARYLAND.

At a public commencement held on the 28th May, the degree of Doctor of Medicine was conferred on the gentlemen whose names are annexed to their respective Dissertations and places of residence.

Stouten W. Dent, Md., on Fractures of the Neck of the Os Femoris within the capsular ligament.

Maurice Morrison, Md., De Cerebii Anatomia.

Richard Mott, Md., Erysipelas.

Edward C. Fisher, Va., Hæmorrhoids.

Henry S. Hunt, Md., Epilepsy.

George Newcomb, Md., Aneurism.

John C. Roynolds, Md., De Hydrope.

Hiram W. Cochrane, Md., Inguinal Hernia.

William Grahame, Md., Circulation of the Blood.

Albert E. Wrenn, Va., Dysentery.

Samuel Laurason, Md., De Circulatione Sanguinis.

William P. Flint, Md., De Gonorrhœa.

John R. Fergusson, Md., Cholera Infantum.

John Gibson, Md., Inflammation.

Alexander H. Mason, Va., Physiology of the Liver.

Miles L. Greetham, Md., Digestion.

George D. Norris, Md., Anatomy, Physiology, and Diseases of the Kidnies.

Ozeas R. Heartte, Md., Yellow Fever.

John S. Lewis, Va., Cholera Infantum.

Richard C. Ambler, Va., Materia Alimetaria.

Philip Bodmann, Germanus, Sea Sickness

Charles F. Snowden, Md., De Systematis Nervosi Officiis.

John F. Spalding, Dysentery.

Garret S. Layton, Del., Hydrocephalus Internus.

George M. Brown, Va., Cholera.

John Harrison, Md., Theory of Inflammation.

William B. Magruder, D. C., Canine Madness.

George L. Fauss, Pa., Cholera Infantum.

William H. Selby, Md., Effects of Music in palliating and curing Diseases.

John C. Wright, Va., Apoplexy.

John A. E. Horsey, Md., Acute Hepatitis.

Robert H. Cumming, Md., Phthisis Pulmonalis.

Thomas O. Dwyer, Hibernus, Hæmorrhagia Uterina.

John C. Orrick, Md., History of Medical Sciences.

Thomas Monroe, Flor., Use and abuse of Mercury.

Walter B. Turpin, Md., Hepatitis.

Thomas O. Edwards, Va., on the comparative merits of the

modes of reducing dislocations of the Femur, as pratished by Sir Astley Cooper and Professor N. R. Smith.

Thomas Owens, Md., Parabysma Splenicum.

Robert Franklin, Md., Cynanche Tonsillaris.

John S. Grover, Md., Asthma.

George W. J. Powell, Md., Fractures.

James R. Stephen, Md., Phthisis Pulmonalis.

Daniel Davis, Md., Dyspepsia.

James Armitage, Md., Apoplexy.

John F. Williams, Md., Phthisis Pulmonalis.

Francis W. Pendleton, Va., Puerperal Convulsions.

William W. Gregory, Va., Dysentery.

Hugh Morison, Va., Fever.

Aaron B. Hardcastle, Md., Dysentery.

Benj. J. Duval, Va., Cynanche Trachealis.

Elias B. Edmonds, Va., Syphilis.

John M. Henderson, Va., Medical Physiognomy.

Edward H. Calvert, Md., Production and Growth of the Fœtus.

Robert C. M'Caig, Ohio, Vaccination.

Thomas W. Duvall, Md., Dropsy.

John T. Mitchell, Md., Principle of Life and Action of the Heart.

Benson B. Hall, Md., Dysentery.

Thomas J. Rowlings, Md., Acute Phrenitis.

Thomas M. Moore, Pa., Apoplexy.

William A. Gillespie, Pa., De Hepatite.

Joseph Slingsluff, Md., Epilepsy.

Robert Gale, Va., Cholera Morbus.

Philip Rogers Hoffman, Excitation and accumulation of the Galvanic Fluid.

George R. Hall, Md., Emetics.

Enoch George, Md., Cynanche Trachealis.

NATH'L. POTTER, Dean.

The premium for the Dissertation best written in Latin, was adjudged to Thomas O. Dwyer.

JEFFERSON MEDICAL COLLEGE.

4. At the sixth annual commencement of the Jefferson Medical College, held on the 9th May, the degree of Doctor in Medicine was conferred by Ashbel Green, D. D., LL. D., President of the Board of Trustees, on the following gentlemen:—

Jos. R. De Prefontaine, Pa., on Herpes.

Lorenzo N. Henderson, Pa., Curative effects of Loss of Blood.

- John S. Rohret, Pa., Identity of Variola, Varioloid, and Variola-Vaccina.
 James A. Lowrie, Pa., Tic Doloieux.
 Owen H. Wily, Pa., Remitting Fever.
 Samuel Wilson, Pa., Amenorrhœa.
 John Steele, Pa., Hæmoptysis.
 Seba A. Pearson, Pa., Intermittent Fever.
 Joseph D. C. Arts, Pa., Efficacy of Iodine in Diseases.
 John Gegan, Pa., Tartar Emetic.
 George Clinger, Pa., Acute Rheumatism.
 Charles P. Bye, Pa., Dysentery.
 George T. Dare, Pa., Apoplexy.
 Robert J. Dodd, Pa., Typhus Icteroides.
 William Wersler, Pa., Acute Rheumatism.
 Alexander Ramsey, Pa., Diseases on the borders of Schuylkill
 in Summer and Autumnal months.
 Charles F. Merideth, Pa., Scarlatina.
 Jonathan Sheldon, Pa., Menstruation.
 John Leonard, jr. Pa., Injuries of the Head.
 George H. Beamer, Pa., Gonorrhœa.
 John M. Pugh, Pa., Chirurgical Practice.
 James J. Given, Pa., Ulcers.
 John J. Wilson, N. J., Effects of Cold Drinks on the Human
 Stomach.
 Myles Synnott, N. J., Cynanche Trachealis.
 William S. Vanneman, N. J., Epilepsy.
 John R. Klapp, N. Y., Bad effects of Cold Drinks in preterna-
 tural heat of the body.
 Asa Egbert, Ohio.
 James W. Bacon, Ky., Cholera Infantum.
 David H. Davis, Ky., Abortion.
 William P. Godwin, Tennessee, Neuralgia.
 John A. Talbot, Va., Nature and Causes of Epidemical Dis-
 eases.
 Augustus Devazac, Louisiana, Pathology of Dysentery.

THE FOLLOWING CIRCULAR

Is respectfully addressed to the Medical Practitioners and Students of the United States, and to all who feel interested in the cultivation of Medical Knowledge.

The JEFFERSON MEDICAL COLLEGE was instituted in Philadelphia in 1825, and during its first session was endowed by an act of the legislature of Pennsylvania, with power to confer degrees in medicine, and with all the privileges and prerogatives of similar institutions in our own country and in Europe.

Since its foundation more than 700 students have attended the respective courses of Lectures ; and of this number, 177, from various sections of the United States, the Canadas, West Indies, and Europe, have been admitted to the degree of Doctor of Medicine.

The seventh session of the college will commence on the first Monday of November next, and, it is believed, under the most favorable auspices ; every obstacle to its future advancement having been removed, and such measures adopted by the board of trustees as will give a new impulse to the exertions of the faculty.

The additions which have been made to the anatomical cabinet, with the facilities afforded for dissection and demonstration, are such as will bear comparison with those of the oldest medical school on this side the Atlantic.

In all other respects, it is confidently believed, it is not surpassed by any of its sister institutions, with *all* of which, as far as is known, it is placed on a footing of perfect equality—a course of lectures in one, being held equivalent to a course on the same branches, in every other.

The almshouse and hospital of the city are accessible by all students during the whole year, and in both these institutions clinical lectures are delivered at appointed hours.

The fee for attendance on each course is \$15. The graduation fee is \$15, and no other charge is made either on matriculation, or subsequently.

The whole expense is, therefore, little more than \$200 for the two full courses required by law to entitle the student to graduation. One of these, at least, must be attended in this institution ; and it is further required, that the candidate shall have studied three years (inclusive of the terms of attendance on the lectures) under the direction of a respectable practitioner of medicine—that he shall be twenty-one years of age—and having presented a thesis on some medical subject, shall give satisfactory evidence of his qualifications on an examination by the faculty, which takes place immediately after the close of each session.

The annual commencements for conferring the degrees, will not be delayed beyond the time requisite to complete the examination, that no unnecessary expense may be incurred by the student for board. This may be procured in Philadelphia, at the rate of from \$2 50 to \$4, in very respectable houses, to which the janitor will furnish references.

Ten students are by law admitted gratuitously each session, (the sum of \$20 only being paid by each, to meet the current expenses of the institution.)

The following is the organization of the faculty :—

Anatomy, SAMUEL M'CLELLAN, M. D.—Practice of Medicine, JOSEPH KLAPP, M. D.—Materia Medica and Pharmacy, SAMUEL CALHOUN, M. D.—Institutes of Medicine and Medical Jurisprudence, B. RUSH RHEES, M. D.—Surgery, GEORGE M'CLELLAN, M. D.—Obstetrics, and Adj't. Professor of Surgery, USHER PAR-

sons, M. D.—Chemistry, JACOB GREEN, M. D., and CHARLES DAVIS, M. D., Adjunct.

All communications to the faculty to be addressed to SAMUEL M'CLELLAN, M. D., Dean, Jefferson Medical College in Tenth-street, near Walnut.

EZRA STILES ELY,
Secretary of the Ad. Trustees.

Philadelphia, April, 1831.

NEW-YORK MEDICAL AND PHILOSOPHICAL SOCIETY.

Resolved, That a transcript of the declaration of the objects of the society be published in the Medical Journal of New-York, signed by the president and secretary.

DECLARATION.

WHEREAS the science of medicine is still unsettled, much being left, in the practice, to the fancy or judgment of the individual practitioners, and each one preferring his own sentiments to what he deems to be the assumptions of his colleagues, by reason of which great want of unanimity of principle, feeling and action, prevails now, as in all former times, among the professors of the healing art; and, in consequence of these elements of the medical compact, there exists in the present, equally as in former times, notwithstanding the progress of civilization, and the happy reformation in the other sciences, by which their votaries are enabled to pursue them in harmony and friendship, a lamentable facility for the rise and perpetuity of disgraceful and uncharitable feuds between both the writers and practitioners of Medicine, which corrupt their morals and impair their happiness, retard the progress of true knowledge in their art, and, in many ways, endanger the health, and even destroy the lives of their fellow men.

Now, therefore, holding it to be our duty to labor for the removal of these evils, we, the undersigners, have resolved to associate, and do associate under the title of the New-York Medical and Philosophical Society, for the promotion of the objects we hereby declare and specify: viz.

1. The trial of existing doctrines, theories, hypotheses and systems of medicine, by just, and, as far as we possess capabilities, elaborate investigation of their merits, conducted in the academic and forensic methods of discussion; holding ourselves solemnly and inviolably bound to aim at the truth continually, without being biased by personal pride, or any other passion whatever.

2. The furnishing, as often as may be, complete statements of diseases from our several circles of practice, professing the same adherence to truth as in article 1, and being resolved to make plenary and impartial statements, free from hypotheses, and, as far may be, free from technicalities, such statements as shall be good and available testimony in all future time.

3. The cultivation of courteous, upright, and friendly sentiments and conduct, among the members of our profession; believing it to be unbecoming our characters as men and physicians, to entertain ill-will toward others, on account of opinions and theories they may have drawn, whether ignorantly or wisely, from the unsettled elements of medical science.

By order of the Society,

H. B. GRAM, *Pres.*

LUKE BARKER, *Sec'y.*

UNIVERSITY OF PENNSYLVANIA.

At a medical commencement, held March 24th, 1831, the degree of Doctor of Medicine was conferred upon the following gentlemen:—

George Blacknall, N. C., Local Blood-letting.
 Lawson F. Henderson, N. C., Indolent Ulcers.
 Robert H. Dalton, N. C., Pathology of Fever.
 Thomas D. Parke, N. C., Scrofula.
 Algernon S. Perry, N. C., Acute Gastritis.
 G. W. Caldwell, N. C., Tartar Emetic.
 James K. Nisbet, N. C., Cynanche Trachealis.
 William L. Hogan, N. C., Modus Operandi of Cold.
 John Allison, N. C., Peripneumonia.
 Calvin C. Covington, N. C., Jaundice.
 Joseph H. Cheairs, N. C., Acute Peritonitis.
 John M. Galt, Va., Acupuncture.
 Harvey Feamster, Va., Hernia.
 Anderson Wade, Va., Duodenitis.
 James R. Conrad, Va., Peripneumonia.
 William B. Forsyth, Va., Injuries of the Joints.
 Euclid Borland, Va., Acute Rheumatism.
 William B. Cochran, Va., Capillary System.
 William D. Scott, Va., Chlorosis.
 Alfred W. Shields, Va., Tetanus.
 Daniel S. Morgan, Va., Fever.
 Adolphus C. Smith, Va., Dysentery.
 John G. Carter, Va., Pneumonia Biliosa.
 Robert S. Payne, Va., Dropsy.
 Miles George, Va., Apoplexy.
 Randolph Kownslar, Va., Copulation and Fecundation.
 William D. McGuire, Va., Bilious Remittent Fever.
 Richard Blow, jr., Va., Modus Operandi of Cold.
 John N. Broocks, Va., Peritonitis Acuta.
 Samuel A. Pattison, Va., Proximate Cause of Inflammation.
 Nathaniel G. Friend, Va., Jaundice.

- William A. Davison, Va., *Eupatorium Perfoliatum*.
 Morris Emanuel, Va., *Erysipelas*.
 Benjamin F. Taliaferro, Va., *Hæmoptysis*.
 Richard C. Tunstall, Va., *Bilious Fever*.
 Thomas P. Nash, Va., *Scrofula*.
 Thomas Cooper, Va., *Pathological Observations illustrated by Cases*.
 Thomas S. King, Va., *Fracture of the Patella*.
 Thomas J. Vaiden, Va., *Endemics, Epidemics, and Contagious Diseases*.
 Carter Berkeley, Va., *Luxation of the Scapulo Humeral Articulation*.
 Lucius C. Leland, Va., *Pertussis*.
 John W. Wooldridge, Va., *Acute Hepatitis*.
 Henry S. Rennolds, Va., *Fracture of the Clavicle*.
 Lemuel S. E. Moss, Va., *Hepatic Inflammation*.
 Samuel Scott, Va., *Phenomena of Death*.
 Richard H. Stuart, Va., *Digestion*.
 Robert H. Wharton, Va., *Hepatitis*.
 Benjamin R. Wilkinson, Va., *Pertussis*.
 William B. Price, Va., *Intermittent Fever*.
 William Steed, Va., *Helminthology*.
 Benjamin F. Wilson, Va., *Typhoid Fever*.
 Daniel Trigg, Va., *Hydrocephalus Acutus*.
 Meriwether L. Anderson, Va., *Fever*.
 Thomas J. A. Cooke, Va., *Revulsives*.
 William Yates, Va., *Chorea Sancti Viti*.
 Charles E. Orrick, Va., *Cholera Infantum*.
 William French, jr., Va., *Dysentery*.
 Vincent Bramham, jr., Va., *Bilious Inflammatory Fever*.
 Lucian B. Price, Va., *Hydrops Abdominis*.
 William F. M'Clenahan, Va., *Phlebitis*.
 William A. Brockenbrough, Va., *Diseases on tide water of Virginia*.
 Philip L. Lightfoot, Va., *Acute Peritonitis*.
 Thomas D. Mutter, Va., *Chronic Inflammation of Testis*.
 John G. Dillon, Va., *Puerperal Fever*.
 Aurelius Sallé, Va., *Prolapsus Uteri*.
 Charles E. Miller, Va., *Splenitis*.
 Francis T. Stribling, Va., *Peritonitis Acuta*.
 Andrew M. Glassell, Va., *Acute Dysentery*.
 John J. Thompson, Va., *Cholera Infantum*.
 Benjamin J. Walker, Va., *Acute Dysentery*.
 Lewis W. Minor, Va., *Phlebitis*.
 John S. Nicholas, Va., *Physiology of the Nervous System*.
 William A. Ludwig, Pa., *Measles*.
 Joel Fithian, Pa., *Hydrocele*.
 Joseph P. Musgrave, jr., Pa., *Gastritis Acuta*.
 Joseph W. Paul, Pa., *Opium*.

- Charles P. Fairlamb, Pa., Trachitis.
 Isaac Parry, Pa., Dyspepsia.
 Moses W. Marshall, Pa., Apoplexy.
 Thomas T. Smiley, Pa., Digitalis in Dropsy.
 Coburn Whitehead, Pa., Hæmoptysis.
 Napoleon Constantine Barrabino, Pa., Injurious Effects of Tight Lacing, on the Female, &c.
 William Corson, Pa., Erysipelas.
 Theodore Dewees, Pa., Enteritis.
 Lewis B. Bringham, Pa., Erysipelas.
 Thomas M. Smith, Pa., Inflammation as Modified by Heat and Cold.
 Charles H. Humphrey, Pa., Changes from Utero-gestation.
 George Maulsby, Pa., Mania a Potu.
 Peter F. Nagle, Pa., Phthisis Pulmonalis.
 Henry De Witt Pauling, Pa., Simplocarpus Fœtida.
 Joseph Hutchins, jr., Pa., Cholera Infantum.
 Thomas Read Potts, Pa., Hepatitis.
 Humphrey M. Harlan, Pa., Prolapsus Uteri.
 Joel Darrah, Pa., Mania a Potu.
 John W. M'Kinney, Pa., Variola Vaccina.
 Arthur D. Cernea, Pa., Dyspepsia.
 Newton May, Pa., Idiopathic Hæmorrhage.
 William Gregg, Pa., Autumnal Bilious Fever.
 Tilghman H. Martin, Pa., Pneumonitis.
 Benjamin Malone, Pa., Endermic Applications.
 Horace Evans, Pa., De Cancro Naturi.
 George Hamilton, Pa., Intermittent Fever.
 Caleb Ash, Pa., Stricture of the Œsophagus.
 Abraham L. Huebener, Pa., Injuries of the Head.
 John Young Wallace, Pa., Gangrenous Ulcers.
 Alfred Langdon Elwyn, Pa., Melancholia.
 Samuel Booth Malone, Ala., (U. S. N.,) Inguinal Ganglionitis peculiar to West Coast of South America.
 William H. Coleman, Ala., Leucorrhœa.
 John P. Ford, Ala., Apocynum Cannabinum.
 Thomas G. Graham, S. C., Sternalgia.
 William Reynolds, S. C., Cholera Morbus.
 John Lake, S. C., On the Brain.
 Isaac William Stokes, S. C., Remote Cause of Bilious Fever.
 James A. Young, S. C., Peritonitis.
 Isaac Lyons, jr., S. C., Strictures of the Rectum.
 Joseph T. Capers, S. C., Lithotomy.
 Alfred A. Woodhull, N. J., Fever.
 William Daniels, N. J., Dysentery.
 Benjamin P. Howell, N. J., Intermittent and Remittent Fever.
 J. Van Dyke Joline, N. J., Apoplexy.
 George Bayles, N. J., Neuralgia.
 William S. Longstreet, N. J., Puerperal Fever.

John W. Malone, Geo., Acute Inflammation.
 Abraham S. Hill, Geo., The Pulse.
 Willis B. Harvey, Geo., Dyspepsia.
 Richard D. Moore, Geo., Natural Labor.
 Thomas L. De Graffenreid, Geo., Hæmorrhoids.
 Jeremiah Beall, Geo., Dysmenorrhœa.
 Ferdinand V. Burdell, Geo., Morbid Effects of Cold Water.
 Timothy G. Barnard, Geo., Milk Leg.
 Burwell Ingram, Geo., Acute Hepatitis.
 Edward Naret, France, Mania a Potu.
 William T. Crain, Lou., Dropsy.
 Reuben Willis, Ky., Fever.
 John Prince, Del., Cynanche Trachealis.
 John N. Esselman, Ten., Fever.
 Horatio N. Lloyd, D. C., Bronchitis Acuta.
 Charles Turnbull, Miss., Scrofula.
 Volney Metcalfe, Miss., Gastritis.
 Edward W. Ford, N. Y., Sympathetic Irritations.
 Richard Wootton, Md., Tonsilitis.
 Thomas A. Fleming, Md., Acute Peritonitis.
 Solomon M. Jenkins, Md., Diet.
 Simon A. Wickes, Md., Hæmoptysis.
 Charles A. Hathwell, Md., Phlegmasia Dolens.
 James R. Fitch, Nova Scotia, Trachitis.
 James H. Randolph, Florida, Hæmoptysis.
 Alonzo Chapin, Mass., Non-contagiousness of Typhus.

At the commencement of July, 1830, the degree of Doctor of Medicine was conferred upon—

Samuel Roan, Va., Bilious Fever.
 William Dunn, N. C., Mania a Potu.

W. E. HORNOR, *Dean.*

TRANSYLVANIA UNIVERSITY.

MEDICAL GRADUATES, 1831.

At a public commencement held in the Medical Hall of Transylvania University, on Thursday, the 10th of March, 1831, the degree of Doctor of Medicine was conferred on the following gentlemen, who submitted Dissertations on the subjects annexed to their names, viz. :

Charles W. H. Alexander, N. C., Thesis de Ingenita tractatione antecedente et subsequente Chirurgia ; et ejus momento.

Shadrack Bell, Tenn., Curved Spine.

Henry W. Benson, Miss., Diseases of Dentition.

Anderson M. Berry, Ky., Typhus Fever.

Thomas C. Black, Tenn., Rheumatism.

Boling A. Blakey, Ala., Mercury, and the Treatment of Mercurial Salivation.

Burwell R. Bobo, S. C., Phrenology as applied to Pathology and Surgery.

Hugh S. Bodley, Ky. Paronychia.

James A. Bullock, S. C., Dyspepsia.

Swan P. Burnett, N. C., Typhus Fever.

Newton L. Cain, Geo., Fractures of the Cervix of the Os Femoris.

William M. Carper, Va., Dysentery.

Robert F. Cooke, Tenn., Sanative influence of Biliary Evacu-
tions elicited daily in the Treatment of Chronic Diseases.

Richard C. Crump, Va., Digestion.

Robert M. Daniel, S. C., Digestion.

James W. Dunklin, Ala., Puerperal Fever.

Samuel T. Feamster, Va., Emetics.

Washington W. Geiger, S. C., Congestive Fever.

Richard C. Griffin, S. C., Bilious Intermittent Fever of the South.

Thomas B. Grigg, Va., Non-contagious nature of Rubeola.

William B. Hamilton, Ky., Caries of the Teeth.

John W. Hanna, Ala., Epidemic Fever.

Charles R. Irwing, Va., De Diagnose Erysipelatis ab Phlegmone
et Erythemate.

Robert E. Jones, Va., Puerperal Fever.

Frederick Jones, Ala., Endemic Fever of Madison County, Ala-
bama.

Thomas Littlejohn, S. C., Digestion.

Carey L. Lesueur, Geo., Autumnal Bilious Fever of Southern
Climates, with its Pathology and Therapeutics.

Robert C. Malone, Tenn., Inguinal Hernia.

Nathaniel E. McClelland, N. C., Cholera Infantum.

Preston B. McGowan, Ky., Use of Emetics in Indigestion.

John R. McLeod, Ala., Bronchocele.

Samuel G. Menzies, Ky., Dysentery.

William B. Moores, Tenn., on a Remittent Fever which pre-
vailed epidemically in Smith County, Tennessee, in the autumn
of 1830.

Madison Montgomery, Geo., Syphilis.

John T. Nolan, Ala., Opacity of the Cornea.

James O'Brien, Ireland, Hydrophobia.

Joseph J. A. Pugh, Tenn., Physiology of the large Intestines.

Edwin T. Rochester, Ky., Acute Dysentery.

Alfred E. Saunders, Va., Hydrocephalus.

Mark H. Scales, Tenn., Amenorrhœa.

James E. Scott, Ala., Dysentery.

Thomas Smith, Ky., Application of the Bandage in the Treatment of Fractures.

William S. Smith, Miss., Physiology of the Brain.

Samuel Snoddy, S. C., Digestion.

Buford A. Spurr, Ky., Non-contagion of Yellow Fever.

Hiram J. Thomas, Tenn., Morbus Coxarius.

Rufus A. Wallace, N. C., Congestive Bilious Fever.

Henry Y. Webb, Tenn., Diabetes.

Charles Williams, S. C., Sympathies of the Stomach.

John P. Williams, Tenn., Erysipelas.

Joseph C. Woodson, Ky., Cachexia Africana.

Elijah J. Young, Ky., Prolapsus Uteri.

The honorary degree of Doctor of Medicine was conferred upon James King, of Knoxville; Tennessee; and Pinckney C. Caldwell, of Charlotte, North Carolina.

C. W. SHORT, M. D., *Dean.*

BIBLIOGRAPHICAL RECORD.

1. *A Treatise on Hysteria.* By GEORGE TATE, *Member of the Royal College of Surgeons in London.* Philadelphia; E. L. Carey and A. Hart. 1831. 8 vo. pp. 134.

We are glad to see an American re-print of this work. It is purely practical, and will prove a valuable source of reference in the treatment of a Protean disease, that not unfrequently baffles even the most skilful. We have read the treatise with much satisfaction, and recommend it to the profession.

2. *A Treatise on the Nature and Cure of those Diseases, either acute or chronic, which precede change of structure, with a view to the preservation of health, and particularly the prevention of organic diseases.* A. P. W. PHILIP, M.D. F.R.S. L. & E. *With Notes and Appendices.* By J. H. MILLER, M.D. *Professor, &c. Washington Medical College of Baltimore.* Baltimore; Edward J. Coale. 1831. pp. 328. 8vo.

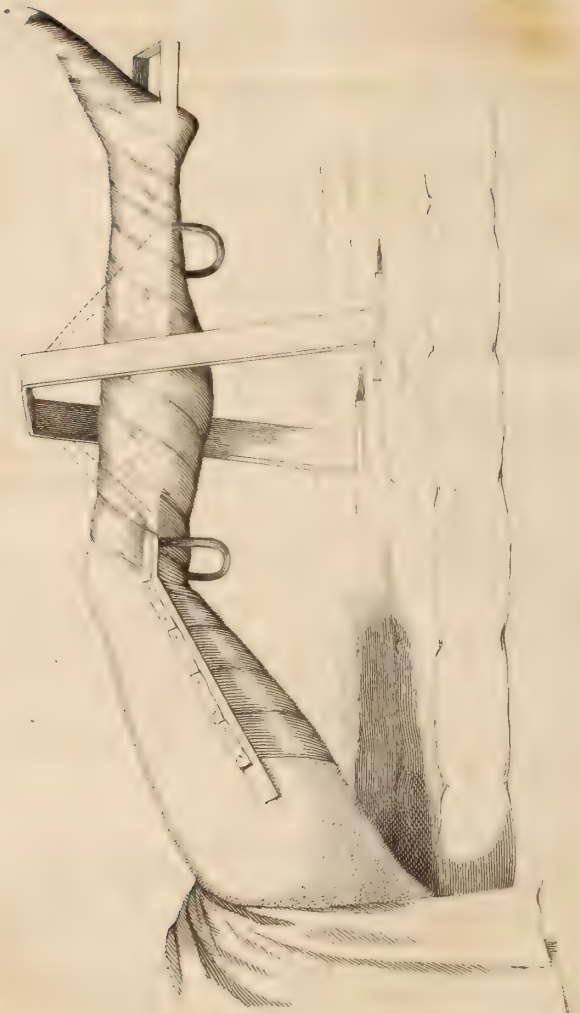
The appendices form about 50 pages of this work. Dr. Miller's physiological views are peculiar, and shall be the subject of a review in our next number.

3. *Select Medico-Chirurgical Transactions.* This work, now in the course of publication by Messrs. E. L. Carey & A. Hart, of Philadelphia, is intended to comprise the best memoirs read before the most prominent societies in London, Edinburgh, Dublin, Turin, Paris, &c. There can be no doubt of the immense value of such a publication, if conducted with talent and caution. We do not hesitate in believing, that it will entitle itself to the patronage of the profession, from the well known character of the editor, Dr. Isaac Hays. Would it not be well for Dr. Hays to incorporate in this work, those essays which, possessing much value, are still lost to the profession by being printed in the transactions of the American Philosophical Society, and of some other associations in the United States? We would recommend this to the attention of the editor.

4. *Lectures on Inflammation, exhibiting a view of the General Doctrines, Pathological and Practical, of Medical Surgery.* By JOHN THOMPSON, M.D., &c. &c. Philadelphia; Carey & Lea, 1831.

A second American edition of this valuable work has just appeared from the Philadelphia press. It is needless for us to make any other remark, than that a medical or surgical library would be incomplete that had not this volume upon its shelves.

5. We have received the prospectus of a journal proposed to be published at Philadelphia, under the title of "*The Philadelphia Medical Gazette, and Journal of Natural Science*," to be edited by SAMUEL D. GROSS, M.D. By this gentleman's qualifications, some judgment may be formed by the notice we have taken of his work on the Bones and Joints. We wish him success.



Dr. N. R. Smith's Apparatus.

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TO CORRESPONDENTS AND READERS.

A variety of interesting articles have been unavoidably omitted in the present number. They shall appear in our next. Among these are, a Defence, by an able and worthy Correspondent, Dr. **HEUSTIS**, of his views of Fever, maintained in his Essay on the Bilious Epidemics of this country; also, a Review of Third Edition of Denman's Midwifery, by Dr. **FRANCIS**, of which we cannot speak in too much praise, both as respects the value of its contents, and the beauty of its mechanical execution.

THE
NEW-YORK MEDICAL JOURNAL.

AUGUST, 1831.

ARTICLE I.—*Annual Address, delivered before the Medical Society of the State of New-York, on the 2d of February, 1831.*
By JONATHAN EIGHTS, M. D., *President of the Society.*

GENTLEMEN,

THE by-laws of the Society make it my duty to address you on this occasion. But when I consider the able manner in which this duty has been performed by my predecessors in office, I almost shrink from the task imposed on me. Unwilling, however, to transgress a law of the Society, and to discourage a custom so salutary and useful, I trust that the few remarks I shall offer, will be received with that indulgence from the members, which a consideration of the arduous duties of our profession must suggest.

The subject, gentlemen, to which I wish to draw your attention, is one of vital importance to the community, and which, if properly conducted, is one of the greatest blessings which Heaven in its goodness has bestowed on mankind. It is to the medical profession that the dispensing of the benefits of this blessing is committed, and the lives of thousands and tens of thousands are dependent on the manner in which this duty is performed. It is to the profession, that the community look up as the guardians of this blessing, and in them they confide, to render it of inestimable value. It is on them that the responsibility rests, either to make it what the God of nature intended—a *blessing*—or by their carelessness and inattention, a *curse*.

The subject to which I allude is—VACCINA, COW or KINE-POCK. And I have to apologize, gentlemen, for introducing it on this occasion, after the able remarks made by my learned friend who delivered the address at the last anniversary of this Society: but the importance of the subject, and a conviction

in my own mind, from observations made for several years on the manner in which vaccination has generally been performed, and the dreadful consequences which must ensue, should small-pox become epidemic among us, has induced me to offer some remarks on this interesting subject.

I am sensible I can offer nothing new :—It is a topic that has been discussed by able and enlightened men in almost every part of the world, where the benefits of this prophylactic have been experienced for more than thirty years; and we have cause for congratulation, when we are sensible, that however powerful the efforts which have been made to destroy the confidence of physicians and the public in its anti-variolous properties, it has continued rising in the estimation of the learned and philanthropic; its merits duly appreciated, and an univereal confidence in its powers, is taking the place of alarm and distrust.

It is true that this subject has been already introduced into the Society—has partaken of its deliberations, and has been disposed of in a way, which, if carried into effect, is perhaps best calculated to insure success. My wish is to second the efforts of the Society, and to draw the attention of physicians, generally, to this important subject.

The degree of security afforded by vaccination, when properly administered, against the contagion of small-pox, is a matter of very high moment: it is not a question of theory, but one intimately connected with the existence and well-being of the human race. Small-pox is a loathsome and a dangerous disease, and every thing which can alleviate its horrors, or lessen its fatality, is of the utmost importance to mankind. Vaccination has already disarmed small-pox of its malignancy; it has saved the lives of thousands of our fellow creatures; and it will continue to extend its benign influence, if properly conducted, encouraged and protected.

“Kine-pox has been introduced by no illiberal arts or empirical pretensions, like many other projects in medicine; its supporters have been contented with laying before the public the result of experience, conducted with ability and impartiality. The reputation it has acquired may be considered as well founded, and its introduction into every country where it has been practised, has been under the most favorable circumstances.”

It is not my intention to enter into a history of kine-pock—this has frequently been done by more able and more competent men. Suffice it to say, that from the time of JENNER, to this period, it has had to contend, like almost all other great discoveries, with enemies both open and concealed—those who undervalue every thing, however useful to mankind, that stands in

the way of private interest or sordid views, or is in the least opposed to a warped or prejudiced mind.

The introduction of inoculation for small-pox into England in 1821, by which it became a mild disease when compared with the original, and by means of which the lives of thousands were saved, met with the most violent opposition. Its promoters were stigmatized as hellish poisoners and the enemies of mankind, and charged with making men murderers of their fathers and mothers, of their relatives and innocent [children; and with the most unfounded representations and base falsehoods, it was endeavored to oppose the spreading of that salutary and benign remedy. Even the discovery of the circulation of the blood, by the immortal Harvey, by means of which a new era was formed in medicine, was violently opposed and ridiculed, and himself persecuted for promulgating a discovery, which has been considered of inestimable value to the world.

When kine-pock was first introduced, and during its progress for several years, the most unbounded confidence was placed in its anti-variolous powers. Hopes were entertained by the humane of every country where it was practised, that small-pox in a few years would be eradicated from the world. The facts resulting from the practice of this prophylactic encouraged this anticipation; but it appeared in a few years after, that small-pox in a modified form, usually termed varioloid, made its appearance after vaccination in some few cases. This, although a mild disease, when compared with even inoculated small-pox, was made use of by the opposers of kine-pock as an argument to discredit its powers, discourage its use, abandon its practice, and to recommend the returning again to small-pox inoculation; and indeed many physicians of eminence had their confidence in its protecting powers much weakened. The public, also, observing a disease, so nearly resembling small-pox, occurring after vaccination in some few instances, and notwithstanding in almost every case a mild disease, and even that no deaths ensued, became alarmed for their safety, and entertained doubts of their security from small-pox infection. Those doubts and fears were often encouraged by designing men. We have reason, however, to congratulate the profession and the public, that the true nature of this prophylactic is now better understood, and from numerous experiments and observations, it is still considered as worthy of the patronage of an enlightened profession, and the encouragement and confidence of the public.

In the further remarks I shall offer, I shall—

1. Endeavor to establish the anti-variolous powers of vaccination.

2. Account for the failure of vaccination in many instances.

3. Suggest some means to remedy the evil, or to prevent the occurrence of small-pox after vaccination.

I would premise, that I am one of those who firmly believe in the anti-variolous properties of kine or cow-pock, and that, when properly performed and judiciously conducted, it is a complete and perfect security to small-pox infection; and that the principal cause of failure may be referred to the imperfect and careless manner, in which it has, and still continues to be, performed; this belief is founded on experience and observation made for several years, and I am sensible that full justice has not in very many instances been rendered to this prophylactic. In establishing this particular, I beg leave to cite the authority of several eminent men in the profession, who have paid close attention to the subject, both in Europe and in this country, and also to state some facts drawn from my own experience.

Doctor Jenner, after several years of close observations, and repeated experiments on the virtues of cow-pock infection, and after full conviction of its anti-variolous properties, published his inquiry respecting it, in 1798. In it he relates several instances of persons having taken the disease in a casual way, and during a long life resisted the contagion of small-pox, after frequent exposures, and also of their complete security, after inoculation with virus in its most active form.

Doctor Willan has seen the test of small-pox inoculation in 180 persons, who had been previously vaccinated, by experienced persons, without producing small-pox in a single instance.

In 1805, the small-pox raged with uncommon violence and fatality as an epidemic in the city of London. An opportunity was thus afforded of testing the anti-variolous powers of cow-pock, in the most severe manner, in persons who had been vaccinated from the beginning of the year 1799. Thousands and tens of thousands were exposed, and almost all escaped the small-pox, and remained proof against the contagion.

Mr. James Rumsey, an eminent surgeon in Bucks, England, in 1808, gives the result of his experience in vaccination. He says he has vaccinated 3000, and in no one instance, either from the strongest exposure to small-pox or inoculation with it, has he ever seen true small-pox follow vaccination.

In 1829, the small-pox raged as an epidemic in Norwich, in England, and was of the most virulent and malignant character. Mr. Cross, in his account, says, 580 persons died of it—10,000 were protected by vaccination, and only two are reported to

have died, after having gone through with it, from small-pox. It affected almost every one who was liable to contagion. Had these persons been protected by variolous inoculation, conducted in the best manner and under the most favorable circumstances, at least 33 of them (1 in 300) would have died of the process intended to protect them; so that in comparing the advantages of the two methods of protection, we have to weigh 33 deaths certain against 2 contingent, on the invasion of epidemic small-pox. It is the opinion of Mr. Cross, that of vaccinated persons, not more than one in twenty are in the least affected by the most intimate exposure to the small-pox contagion, and that less than one in fifty have even the modified form of the disease.

In the vaccine institution of Edinburgh, under the care of Doctors Farquhar, Bryce, Gillespie and Abercrombie, their report states, that 10,525 were vaccinated since the commencement of the institution, and many who had received the disease in the early periods of vaccination, after frequent exposures, have uniformly resisted the contagion of small-pox. They have also inoculated a great number with active virus, and with the same favorable result. They further state with the greatest confidence, that the result of ten years' experience enables them to declare their decided opinion to be, that vaccination, properly conducted, is a perfect and permanent security to small-pox.

Dr. Creighton, surgeon to the foundling hospital, Dublin, reports, that 19 children vaccinated in 1800-02, were inoculated by him with virus in its most active state, from a person laboring under confluent small-pox. They all resisted the infection. He also states, that he has submitted 500 children and infants, vaccinated by him, to the like experiments, and with the like results.

In the cow-pock institution, Dublin, 12,065 were vaccinated, most of whom were exposed to the small-pox contagion in every possible way, and but three cases of failure occurred. It is believed that, including the above, 85,000 have been vaccinated in the city of Dublin, and but six individuals have been known to receive small-pox after vaccination.

From the report of the Nottingham vaccine institution, an epidemic small-pox raged in that town in 1809-10; 460 persons had the epidemic; of that number 131 died during the 8 months it prevailed. 1012 were vaccinated by the institution, 86 of whom had been exposed to the contagion of small-pox, in the same habitations, for many days previous. The small-pox in 33 of them was entirely prevented by this method—in 46, the small-pox and kine-pock acted on the constitution at the

same time; in all of which cases the small-pox was particularly mild, and in seven persons only, did the cow-pock fail in taking effect—in those the small-pox proceeded in its usual course.

In 1823, small-pox raged as an epidemic in Carlisle, England, to a very great extent and malignancy. What is worthy of remark is, that so highly malignant was the contagion, that neither small-pox by inoculation, or in a casual way, nor vaccination, was a complete preservative—as many of the former taking the complaint as the latter. Doctor Barnes, in his account of the epidemic, says,—Although vaccination has not given complete protection in every instance, yet the late epidemic has afforded much satisfactory evidence of its preservative powers, and of the incalculable benefits derived from it. Many instances have occurred of vaccinated persons escaping, and the unprotected taking the disease, in the same family, even where they were living in the same room, sleeping in the same bed, and were exposed to variolous contagion of the most malignant kind.

In the kingdom of Wirtembergh, the small-pox raged with great severity as an epidemic in 1814–15–16–17, and from official returns made to government, tens of thousands of vaccinated individuals escaped the contagion—only two dying who were registered as having been vaccinated.

Doctor Jameison, in his account of an epidemic small-pox which raged extensively in Baltimore, in 1821–22, says—I have vaccinated more or less children every year for several years past, and I do not know of one individual who has been vaccinated by me in former years that was affected with varioloid, but some of those vaccinated by me in the present year, were affected with it in a slight degree. Dr. Jameison comes to the conclusion that the epidemic has most decidedly established the prophylactic powers of kine-pock.

In 1827, reports unfavorable to the preventive properties of kine-pock were industriously circulated in the city of Philadelphia, and also that several physicians had lost their confidence in it, and were willing to recur to the practice of inoculation. The medical society of that city appointed a committee to collect facts in relation to the recent occurrence of small-pox. This committee, after a full investigation, conclude a long, able and minute report, in the following language: “Thus we may, without the least want of candor, come to the following conclusion, that only one death from small-pox after vaccination has occurred in the city of Philadelphia during the year 1827, among 80,000 vaccinated persons, and during the prevalence of a most malig-

nant and mortal small-pox, while several individuals have lost their lives from it, after they had already gone once through the disease. It appears then, clearly, that vaccination ought to lose nothing of the public confidence, and as a preventive to the fatal effects of small-pox it may safely be asserted, that it is in every sense to be preferred to inoculation."

In 1816, a man was found in one of the streets of this city by the night-watch, and imprudently taken to the alms-house, of which at that time I had the medical care. On my visit to the house the next morning, I discovered he was covered with small pox pustules, and of an unfavorable appearance. As most of the paupers in the alms-house had seen him, and also several visitors, before proper measures could be taken for his removal, it was deemed proper to vaccinate all those in the house, in whom it could not be discovered that they had either been inoculated for small-pox or vaccinated. From a recurrence to my minutes, I find that 34 children and several adults, in all amounting to 52, were carefully vaccinated. In a few days, however, as several cases of small-pox had appeared in different parts of the city, the corporation judged it proper to establish a lazaretto two miles northwest of the city. A woman in the alms-house, aged 28 years, who had refused to be vaccinated, insisting that she had passed through the small-pox in her infancy, although no visible appearance could be discovered, was taken ill with all the symptoms of small-pox. She had a child four months old at the breast, which had been vaccinated with the rest. She was removed to the lazaretto and there died, during the secondary stage of fever, of confluent small-pox. Her infant was nursed by her, and lay with her until within two days of her death, and escaped the contagion.

A family of the name of Bull was in the alms-house, consisting of a mother and four children—they had all been exposed and were vaccinated. The father, who was about the city, was taken ill, and his disease proved to be small-pox. He was removed to the lazaretto, and at his request his family accompanied him. His wife and children were exposed during his illness, which was severe, in the same room, and also to the effluvia of the house, in which from 12 to 18 were confined with small-pox, most of them severe. They universally escaped the contagion. On my visits to this establishment, I was in the habit of exposing my own children, some of whom had been vaccinated as early as 1803, and with perfect security.

In 1824, the small-pox made its appearance in this city, being brought in, no doubt, by emigrants from Canada. It spread with rapidity for some time, until checked by a general vaccina-

tion, and the prudent measures of our corporation. 'There was never, I believe, a greater proof of the preventive powers of kine-pock than during the prevalence of this disease. . Several persons, under my own observation, were vaccinated after severe exposure, and escaped the contagion entirely. I had vaccinated more or less every year from 1810, and I do not recollect of a single instance of small-pox occurring in any person whom I had myself vaccinated. Our city, at the time alluded to, contained a population of from 13 to 15,000 inhabitants; two thirds of that number had probably been vaccinated in some way or other, and from my own belief, and from the opinion of several physicians of this city, not one in 30 of those exposed became affected.

Two medical gentlemen in this city, whom I esteem both as friends and as respectable members of the profession, who had been vaccinated in an early period of their lives, visited and attended many persons laboring under small-pox during its prevalence and since, and have escaped with impunity.

A family in this city, in which were five children, had been vaccinated and gone through with the kine-pock in a satisfactory manner. The two eldest had been vaccinated 15 years previous; the youngest five, and the other two in the intermediate interval between those periods. The small-pox became prevalent in this city in 1824, and a family in their immediate vicinity, two of the members of which had never been protected, either by small-pox inoculation, or by vaccination, became affected. At this time, doubts as to the efficacy of kine-pock in preventing small-pox became prevalent. This family became alarmed, and applied to me for the purpose of inoculating them for small-pox. After some hesitation, their wishes were complied with. Inoculation was performed with virus taken from a pustule, and in the room, where those two persons were confined with small-pox of an aggravated kind. The punctures all became inflamed on the second and third days, and on the fifth, began to decline. On two of them a rash, resembling scarlatina, broke out, with intolerable itching; no constitutional affection was observable in either of them. A dose of medicine to each, restored them to their usual state of health.

I might enumerate many more instances, where vaccination has completely controlled the progress and mortality of small-pox. Enough, however, has been said to satisfy the most skeptical; and every person who is not prejudiced, ought to lend his efforts to promote the progress and success of this great prophylactic, and discourage the propagation and spread-

ing of that dreadful scourge of the human family—small-pox.

2. I am to account for the failure of vaccination in many instances.

It will be necessary here to describe the progress and characteristics of the true vaccine disease. The cow-pock, when communicated by vaccination, presents the following phenomena: Towards the close of the second day, when the operation is successful, a slight speck of inflammation may most generally be perceived. This is more and more conspicuous on the third day. On the fourth, a minute pimple may be felt above the skin. On the fifth day, it puts on the peculiar appearance which distinguishes it from the small-pox pustule, viz.: the perfect regularity and circumscribed form of the pock, with the surface flattened, and a depressed centre of a darker color, so as to have the appearance of elevated edges. This circumscribed form is retained during its whole progress, even during the progress of scabbing. About the sixth day, it has the appearance of a vesicle containing a fluid, which through the cuticle resembles the color of whey. From the sixth to the tenth day, the pock augments considerably; the flattened appearance becomes more conspicuous. About the eighth or ninth day, the slight inflammation which had accompanied it from the beginning, augments moderately, increasing more rapidly about the tenth or eleventh days, so as to extend to one, two, three or more inches in diameter; forming that most beautiful efflorescence, or areola, so truly characteristic of the genuine disease. The centre of the pustule now begins to assume a darker appearance, which extends gradually to the circumference, which in two, three or four days, forms a scab of a dark brown hue and polished surface, becoming more and more intense as the fluid beneath is absorbed, which in a few days becomes detached and falls off; leaving an eschar, more or less indented, corresponding to the number of cysts which contained the lymph of which the vesicle was composed.

This may be considered as the usual progress of a successful vaccination, on which we may safely rely as a complete preventive to small-pox infection; and although in every case the progress may not be so strongly marked, it may be considered as a standard by which to judge of the true disease.

Numerous are the causes of unsuccessful vaccination; and none I will venture to say stands more prominent, than the careless manner in which the operation is performed, and a neglect in observing its progress. It is to be regretted, that the practice of vaccination is held so light, and that every person is sup-

posed capable of performing so trifling an operation; and as medical attendance is seldom required, a spurious disease is often extensively circulated. Often also it falls into the hands of some professional men, who from the careless manner in which they practise it, are alike regardless of their characters and of their duties. If unfortunately they produce a spurious pustule, or an imperfect one, they go on vaccinating, without securing a single individual from small-pox contagion on the first exposure.

Neglect also in not strictly observing the progress of the disease, is another cause of frequent failure. In the progress of successful vaccination, it will be observed that four characteristics or prominent features mark the true disease, viz. the form and appearance of the pustule—the areola surrounding it at the proper time, and its peculiar form, color and extent—the formation of the scab, its color and aspect; and the eschar left on the vaccinated part. Now it is well known to the observing part of the profession, that in many instances, vaccinated persons are seldom seen after the operation, or at most after the third day, and the physician has no knowledge of its progress or its genuine character except from information. The parents or employer are satisfied, if a sore arm is produced—the physician is satisfied with his fee, until by sad experience they are taught that the one has deceived and the other been deceived.

However the opinion which was once prevalent, that a constitutional affection was not necessary to secure the system from future attacks of small-pox, it is now well understood, that a mere local affection is not sufficient: a constitutional affection is absolutely required; and that without it, vaccination, however often repeated, will be of no avail. It is true that this constitutional affection is often so slight as to be scarcely perceptible; but fortunately, nature has provided a sure test of constitutional affection, in that prominent characteristic of the true disease—the areola. And I will venture to assert, the more imperfect this areola, the less the security.

Another cause of the failure of vaccination arises from virus taken from an imperfect or a spurious pustule; and this is probably the greatest source of evil from which vaccination has to suffer. It has already been observed, that a mere local affection will produce a like local disease, and that a spurious pustule will produce the same by inoculation.

Dr. De Carro, of Vienna, ascertained that cow-pock matter was capable of producing a local disease in persons who had previously been affected with small-pox; that matter taken from this source communicated a similar local disease; but that it afforded no security against small-pox infection.

A few years since, being much in want of kine-pock infection, I applied to a physician for it. He furnished me with what he termed first-rate infection. With this I vaccinated three children of Mr. P. of this city. On the second day after the operation, considerable inflammation surrounded the punctures in each, attended with an intolerable itching. On the fifth day a vesicle was formed, of a conical shape, containing a yellow fluid, and a high degree of inflammation, diffuse, irregular, and of a deep red color. On the sixth day, the inflammation was so extensive, and the itching so severe, that I punctured the vesicles and applied the acetate of lead in solution to the arm. A yellow, friable scab formed over each puncture, which in a few days separated, leaving large eschars. Much indisposition attended the whole progress of the disease. Those children were afterwards vaccinated, passed through the disease in a regular manner, and have since been exposed to small-pox contagion without effect.

A short time since, Mrs. W. requested me to vaccinate two of her children. I stated to her the difficulty of procuring infection, but that I would endeavor to obtain it. She informed me that in the family of one of her neighbors a child had been vaccinated by a physician, and that matter could be obtained from thence. At her request, and by permission, I visited the child, and found a pustule resembling those related above, with much inflammation, and not a single feature of the true disease.

In 1829, I was requested to vaccinate a child of Mr. E. B. Much difficulty occurred in procuring infection. A relative of the family, residing a few miles from the city, a physician, sent a scab taken from his own child. It was irregular in its form, friable, so as easily to be rubbed into powder between the fingers, and of a yellow color. It can easily be imagined what must be the result of such vaccinations should they be exposed to small-pox contagion.

Another cause of imperfect vaccination arises from a destruction of the vesicle containing the lymph, and also using it in an imperfect state. It is, I believe, now generally understood, that the true vaccine disease may be communicated by means of lymph taken at any time during the progress of the pustule, from its first secretion until the areola is formed, or while it continues limpid and colorless. The great danger to be apprehended is from abstracting all the lymph from the vesicle, and from the frequent punctures and irritation to produce a disposition in the parts to inflame and ulcerate, and thereby lessen or destroy its effect on the system. The following case, which occurred in my practice a short time since, will more fully illustrate this particular.

A lad, six years of age, son of Mr. E., was vaccinated by me at a time when infection was scarce, and much called for. The operation succeeded, and a beautiful vesicle was completely formed. Lymph was taken from it freely, until inflammation came on, in which faint traces of the areola were discoverable. Ulceration to a considerable extent succeeded; with much difficulty the arm was healed, and doubts were entertained for his safety. He was afterwards vaccinated; the vesicle left undisturbed, and he passed through the disease in a satisfactory manner.

Lymph is also often taken after the areola has formed. With this it is more difficult to succeed. It may indeed communicate the disease, but does not give that perfect security that is produced from lymph taken in an earlier stage of the complaint. The effect of inflammation on the local affection renders the lymph turbid, and in that state becomes unfit to secure the system entirely. This is no doubt one of the causes which renders individuals, thus treated, obnoxious to that modified state of small-pox called varioloid. Lymph may also undergo some decomposition or change, so as to render it unfit to communicate the true disease, from putrefaction, heat, moisture, exposure to air, and many other causes. Even variolous matter, which is a much more active and virulent poison, may be rendered unfit or imperfect by inflammation, by taking it too late in the disease, from putrefaction, or from some obscure or latent process of nature, by means of which it has parted with some of its original properties, so as to render it unfit or incapable of giving the small-pox in such a manner as will secure the constitution from future attacks.

Another cause, and the last I shall mention, of imperfect vaccination, arises from inserting the lymph in persons laboring under some other disease. I believe few practitioners who have paid close attention to the progress of vaccination, but must have discovered the difficulty of producing a fair specimen of kin-pock in persons laboring under herpetic eruptions, scabies, tinea capitis, and almost every other cutaneous affection. Doctor Jenner, on this subject, says, "a single serous blotch upon the skin, existing during the progress of the vaccine vesicle on the arm, may occasion such irregularity and deviation from correctness, that vaccination under such circumstances cannot be perfectly depended on. Abrasions of the cuticle may produce the same effect; such, for example, as we find in the nurseries of the opulent, as well as in the cottages of the poor, behind the ears and upon many other parts of the body where the cuticle is thin. We find it also to be the case if the skin is beset with herpetic

blotches, or even serous oozings from abraded cuticles. It is not to be considered of less consequence when occupying a small space ; a speck behind the ear, which might be covered with a split pea, being capable of disordering the progress of the vaccine vesicle. Dandriff, tinea, and even sore eye-lids, are also impediments to constitutional vaccination ; in fact, every disease of the skin which may be called serous, or one that sends out a fluid capable of conversion into a scab. Purulent fluids exert a similar influence in producing deviations from a perfect disease."

3. I am to suggest some means to remedy the evil, or to prevent the occurrence of small-pox after vaccination.

In the course of this discussion, I have stated as my belief, that vaccination, when properly performed and judiciously conducted, was a complete and perfect preventive to small-pox infection during life, with but few exceptions ; and that the principal cause of its failure in the instances which have occurred, is to be referred to the imperfect and negligent manner in which it has and still continues to be conducted. In those sentiments I flatter myself, I am supported by a large proportion of the profession.

1. In order to prevent the failure of vaccination, it ought to be performed by no person unless a regular physician. It unfortunately has been, and still is the custom, for persons of every grade, of every habit, of every occupation, men and women, to vaccinate, and with instruments as rude and as various as their various occupations. Can it then be a matter of surprise that failures do take place, and that a greater havock in human lives does not occur during the prevalence of epidemic small-pox ? It becomes then the duty of physicians to make themselves thoroughly acquainted with this disease, and with all its variations ; to lay aside all sordid views ; to act as men who have the health, welfare, and preservation of human life only in view, and to consider this as their first and great object.

2. In order to prevent the failure of vaccination, great attention is necessary in obtaining and using good and pure virus. Lymph should be taken from no person for the purpose of vaccination, unless in a healthy state, free from eruptions and constitutional affections of any kind—from a perfect vesicle, and at a proper period of the complaint, to insure its greatest activity. I am aware that diversity of opinion exists on this subject ; but whether used in a recent fluid state or from a crust or scab, the same care and precautions are necessary.

3. Close attention in observing the progress of the disease is necessary to insure success. Any deviation from the regular advancement and progress of the genuine vesicle should be care-

fully watched. The areola, the scab, and even the eschar, should engage the attention; and unless we are perfectly satisfied that the general system is affected by the local disease, re-vaccination should be performed. I am sensible that it will be urged by many physicians, that the small remuneration received for vaccination, will not compensate for the trouble and expense of time which must necessarily ensue from this close attention. But I would ask, does the public require a physician's service and attention without a suitable remuneration? Such is not the case in other instances in which his services are required. May it not rather be attributed to a mercenary and ambitious spirit; an illiberality and want of good feeling towards our fellow practitioners, and an undervaluing of our own services? A state of insecurity renders a person unhappy through life; and those of us who are parents can alone experience the fears, anxieties and solitudes for our children, arising from doubts of their safety from infection. I would again ask, would a reasonable compensation be refused for satisfying the minds of such persons respecting the safety of themselves and families?

4. Care in preserving the vesicle entire and free from injury. Proper instructions should be given to parents and nurses, to prevent, as far as possible, the clothes from rubbing and the child from scratching the pustule, and to suffer no person to take lymph from it in the absence of the attending physician. I am satisfied from my own experience, that where lymph is intended to be taken, vaccination ought to be performed in two different places, so as to suffer one of the vesicles to remain entire.

These are some of the means which, it appears to me, if properly applied, will prevent the occurrence of small-pox after vaccination. Many other might be mentioned, were it necessary, and would time permit. However much has been said respecting idiosyncrasy, or peculiarity of constitution and temperament, in producing this event, I believe the true causes to be what has already been stated—imperfect vaccination, and neglect in observing its progress. If, however, in some few instances, small-pox does occur after vaccination, we may rest satisfied that is a mild and a harmless disease. It has been shorn of its terrors and of its malignancy; since the commencement of vaccination, scarcely a person dying under the disease, where it could be clearly ascertained that vaccination had been properly performed, and where constitutional affection followed. How much more then is vaccination to be preferred to inoculation for small-pox, which does not in all cases secure the individual from future attacks, especially in epidemics, where the malignancy of the contagion is greater than in the inoculated disease, and where it does not

even modify its severity, but rages with all its native horrors and fatality?

Before I close this address, suffer me to say a few words on the subject of obtaining and preserving pure vaccine virus. Every physician knows the difficulty of procuring pure virus when most wanted. They have no source from whence they can draw a supply as occasion may require ; and often in urgent cases they are necessitated to use it of a quality not to be depended on. One physician procures it of another. It is often sent to different parts of the country. A spurious disease is thus frequently, and extensively circulated, and the evil becomes remediless. In my own practice this has been the case. I have observed a pustule rising, progressing and finishing its career, without satisfying my mind of its competency in protecting the system. A determination has been formed to revaccinate with pure lymph when obtained ; but other avocations, removal of the children, and not unfrequently the unwillingness of parents, have prevented its accomplishment. I doubt not many physicians have experienced the like difficulties. An institution, then, founded by private association, and depending on individual support ; or an institution established, conducted and supported by public patronage, is the only means by which this object can be accomplished. Several attempts on the former principle have, I believe, been made in many of the large cities of the Union, and but few have as yet been successful. This may be owing to a want of patronage from the profession generally, and often to a want of confidence in the conductors ;—being individuals without responsibility to any authority for the faithfulness of their conduct in procuring, preserving and transmitting pure virus. They may be men of good characters, and fair standing in the community, but unless it can be made a source of emolument, neglect and inattention are most likely to ensue.

An institution under the patronage and control of the state, properly conducted, and established on a liberal plan, would be a public blessing. In this way an ample supply of pure virus could be perpetuated and transmitted with promptness and facility to every part of the state. By this means spurious disease would soon disappear ; physicians could always depend on a supply of genuine infection, and by the aid thus rendered, a fair hope might be entertained that the horrors of small-pox would only be heard of, and not experienced.

Almost all the governments of Europe have institutions of this kind. Vaccination is under the direction, patronage and control of the states where they exist ; and would not *our* legislature be consulting the vital interests of the state, of posterity, and of

mankind, by turning their attention to this important subject? The preservation of health, and the lives, not only of the present generation, but of unborn thousands, is certainly of as much importance as any subject that can engross their time or their attention.

ART. II.—*Observations on Puerperal Mania.* By J. MACDONALD, M. D. *Physician to the Bloomingdale Asylum for the Insane.*

THE mental disease to which lying-in women are subject, is commonly known by the name of "Puerperal Mania." This implies that all cases of insanity occurring at the puerperal period, are in character really maniacal. But as they are as variable in their forms, as those arising from other causes, it will be more correct to employ the generic term puerperal insanity. Dr. Burrows, in his late very able commentaries on insanity, has devoted a chapter to the investigation of this subject. "Puerperal mania," says this author, "is certainly inappropriate, since the symptoms developed are as often those of melancholia." As puerperal insanity, in the cases that have fallen under my observation, assumed the different characters of mania, monomania and dementia, I would go a step further, and add dementia as a species. As all instances of mental disorder of this kind, with a few exceptions, in which moral influences may have some weight, arise from similar causes, their variety of forms must be attributed to peculiarities of temperament. Each one of these may be said to have its individual trait, by which it may be distinguished from its like form, arising from other causes; thus, in *puerperal mania* there is a peculiar, wandering incoherency of mind, with obscenity of language, and indelicacy of conduct; in *puerperal monomania*, a singular propensity to suicide or infanticide; and in *puerperal dementia*, a sudden and extreme prostration of mental power, equal to that which follows months, or even years, of intense excitement.

The following cases of the different forms of puerperal insanity, are perhaps not so strongly marked as some others that might be selected. It is possible, that the latter might be recognised by the friends of the parties, and it is, therefore, improper to report them.

1st. *A Case of Puerperal Mania.*

B. G. ætat. 19.—No hereditary predisposition to insanity, and never insane before—married almost two years—first child either still-born, or died soon after birth—sanguine temperament:—entered the Asylum May 1st. Five weeks previously, after a natural labor, was delivered of a healthy child; for six days after confinement, “was doing well.” At the expiration of this time, she became suddenly maniacal. Her treatment, adds the attending physician, was antiphlogistic without relief.

Symptoms when admitted.—General excitement; though unable to examine her pulse critically, we found it to be quick and full. Skin hot, as is common in this form of puerperal insanity—general disordered state of stomach and bowels—tongue coated in the centre, with red edges—bowels costive—no stool for several days—mind a perfect chaos, language obscene and incoherent—conduct furious—entire absence of moral propriety.

The first and most pressing indication was to remove the morbid condition of the primæ viæ. This was answered by repeated purging, with sub. mur. hyd. both in large and small doses. pulv. purg. and infus. sen. comp.; and when she refused these, ol. tiglii. During this course, however, typhoid symptoms manifested themselves, but subsided under its continuance. It may here be observed, that it is remarkable to what an extent it is necessary, in some cases of this kind, to pursue this method of treatment. Diet during this period—panada, gruel, arrow-root, light broths.

After the restoration of biliary and other secretions, the nervous excitement manifested by pervigilium, boisterous conduct, &c., next called the attention. From her aversion to medicine, our remedies were directed to the dermoid system alone. Tepid baths and frictions were used with the most tranquillizing effect, inducing quietude and sleep, after days of commotion and nights of pervigilium. Counter-irritation was now produced by ung. ant. tart. extensively applied to the hypochondria and extremities.

June 8th.—The bowels having resumed their natural action, cathartic medicines are no longer exhibited. The baths proving still soothing, continue them. Being still highly excitable, it is necessary to confine her to her room, (except when exercising with the nurse,) entirely secluded from every thing calculated to call forth excitement. Mind still very incoherent, and, as is common in this form of puerperal insanity, conduct indelicate, and language exceedingly obscene.

July 1st.—The digestive functions being now restored to a healthy condition, improvement in general health followed. This, however, being impaired by the heat of summer, a relapse of mental disorder ensued—inflammation of the mammæ, with symptomatic fever supervened. The subsidence of inflammation and fever, was succeeded by a tranquil mind—improvement in general health again took place, her mind daily and uninterruptedly gained strength, and she was discharged *cured*, October 5th, after five months residence in the Asylum.

2d. A Case of Puerperal Monomania.

S. B. admitted into the B. A., July 15th, ætat. 27, married—temperament melancholic—has always been subject to headache at the catamenial period—gave birth to her second child, four months since; and six weeks ago was observed to be palpably insane—ever since delivery, however, her conduct had been marked by many peculiarities, such as general torpor, loss of spirits, disinclination to mental and bodily exertion. She continued to nurse her child, until ten days previous to removal to this institution, when, in consequence of an attempt on his life, he was taken from her. She subsequently made several attempts at self-destruction. Before these occurrences, functional disorder was discovered in the mammæ, her milk had diminished in quantity, and had become watery. Two other circumstances point out the existence of some latent disorder long prior to the development of insanity, viz.: the entire absence of an erysipelatous inflammation, to which she had been long subject, particularly after her first confinement; and looseness of bowels, instead of habitual costiveness.

State when admitted.—Entire absence of mental excitement, mind apparently correct upon every subject, except that of her recent conduct. This she speaks of in the most dispassionate manner—says that she is not, and has not been insane—that moral turpitude alone induced her to kill her child—that she deserves death; that she must be hung; that it was under such expectations she consented to come here; believing this to be the penitentiary, where she was to await her trial, which would result in capital punishment. When told that her child was still alive and well, she replied, it was her *intention* to commit murder, and that she was equally as culpable as if he were dead. As soon as she found herself in the Asylum, she begged to be taken to the strongest cell in the house, chained to the floor, and treated in the harshest manner. Her bodily functions were not materially disturbed, but her eye bore the impress of a disordered mind; it was clouded, fixed and unob-

servant of external objects—its conjunctiva slightly tinged with yellow; tongue partially furred.

Management.—She was partially indulged in her severe course of self-prescribed moral treatment, and with the happiest effects.

Her medical treatment was, a full emetic every third or fourth day, and counter-irritation by ung. ant. tart. extensively applied to the surface. Her improvement was so considerable under this course, that her friends thought it expedient to remove her in about two weeks. Although her subsequent convalescence was less rapid, she ultimately *recovered*.

3d. A Case of Puerperal Dementia.

P. M. admitted into the B. A. 16th July—age 29—married, and the mother of four children—temperament phlegmatic—became deranged for the first time immediately after parturition, and continued so for a year previous to being removed to this institution; of this period of insanity, there is no detailed account. At the time of admission, the more active stage had of course long since subsided, and had been succeeded by one of apathy, amounting to an almost entire cessation of mental action. From her general idiotic appearance, she was considered incurable, and but for a gleam of intelligence that occasionally shone from her countenance, would have been deemed unworthy the trial of any curative means. The only impulse that gave rise to any degree of mental or physical exertion, was an attempt to give her medicine. Her husband and child, who now visited her, attracted no more attention than surrounding inanimate objects. She would sit or stand in the same posture for hours—her daily walk, if she took any at all, was confined to the gallery between her bed-chamber and the day-room. Towards all she observed the most stubborn taciturnity. Her countenance, from the long absence of passion and emotion, had assumed an inflexible, and for the most part vacant cast.

A most active course of moral, as well as medical treatment, was now adopted. She was obliged to make use of great muscular exertion, and was placed under the influence of various medicinal agents, but without radical change. The cloud would, indeed, at times seem to be driven from her mind, but was invariably succeeded by another, equally impenetrable. In this manner six months wore away, with an alternate dissipation and revival of hope. At this period, her thyroid gland was observed to be much enlarged. Supposing that her malady might possibly be connected with glandular obstruction, and judging from the effects of iodine in paralysis, it was thought advisable

to commence a course of this medicine. Notwithstanding her extreme aversion to it, this remedy was faithfully exhibited, (though compulsion was necessary,) till its effects were evident in the glandular system, reducing the tumor in the neck, and restoring the menses, which had been suppressed from the onset of her insanity. Her mind now alternately gained and lost strength; its energies, however, seeming to increase with every successive effort. Every moral agent that would in the least tend to arouse her, was put in requisition. Besides the exercises of walking and riding, it was found useful to excite her in any way that would rouse her resentment.

The recovery of her affections kept pace with that of her mind, and was encouraged by a visit from her child. She now began to inquire into the nature of her situation, and asked after her husband and children. She soon wrote a letter to the former, who immediately visited and removed her. The journey home, and restoration to family, entirely reinstated her mind. Soon after arriving home, she addressed a letter to an individual connected with the Asylum, in which she says, "she felt like a person raised from the dead; that the two last years of her life had been a complete blank; of the transactions of which she had not the slightest recollection." Her residence in the Asylum was just one year.

4th. A Case of Puerperal Mania.

Mrs. S. *ætat* 20, of a sanguine temperament—a short time previous to admission into the B. A., (a few weeks at the farthest,) gave birth to her first child, immediately after which, we were informed in general terms, she became maniacal.

State when admitted.—Countenance animated, and when most so, flushed; at other times pale; eye exhibiting in an unusual degree, the characteristic wildness and lustre of mania—nervous system to the greatest extent morbidly sensible; the opening of a door starts her from her seat, while the presence of a stranger seems to throw her into convulsive motions—manner playful and mischievous—mind in constant action—conversation incoherent and indelicate—pulse frequent—evidences of uterine irritation—tongue partially covered with a brown-coat—bowels torpid. The lochial discharge flowing, though at first suppressed.

Treatment.—Stomach freely evacuated by an emetic; followed by a cathartic course, and almost entire seclusion by confinement to her room. After remaining here nine days, was injudiciously removed home; but returned next day, her case so much aggravated, that severe personal restraint became necessary.

December 4th, day after re-admission, found her raving violently; language incoherent and obscene, constant delirium and pervigilium, tongue furred;—was freely vomited without relief.

5th. R. Sub. mur. hydr. gr. xii., pulv. antimon. gr. xvi. M. et divid. in part. iv.—un. quaque 4ta hora.

6th. With an improved state of secretions, found her much more tranquil.

8th. Bowels torpid. Hab. infus. sen. comp., and continue its occasional use.

13th. Has been more tranquil for several days, but is still highly susceptible of external impressions; to-day much more excited, mind confused, face flushed, pulse accelerated—tongue pale.—Hab. pill. gamb. comp. un. quaque hora ad operand.

16th. Cathartic operated copiously, without any alleviation of mental symptoms.

20th. Mind still variable and susceptible—begin counter-irritation, by the application of ung. ant. tart.

January 2d. Insanity remitting in character—after lucid intervals has paroxysms of frenzy, during which she is entirely destitute of moral propriety. Hab. solut. antimon. gr. iij. æ aqua 3 viij.

Jan. 15th. For the last five or six days, has improved rapidly and uninterruptedly; her malady till this period having been remittent.

Under the constant use of the antimonial solution, which at the same time subdued vascular excitement, and rendered the bowels sufficiently lax, an uninterrupted convalescence succeeded.

Discharged, recovered, Jan. 31st, about ten weeks after admission.

5th. A Case of Puerperal Dementia.

A. Y. admitted 4th August, with puerperal dementia, age 30—married—temperament phlegmatic. The only facts ascertained in relation to the history of her case were, that the attack was recent, that it succeeded parturition, and that her insanity, from its onset to the period of her admission, has observed the same character.

Condition when admitted.—She is in a state of apathy, bordering on complete fatuity; sits for hours together in the same posture, without moving a muscle; is perfectly taciturn; is disinclined even to the exertion of taking food; and with this general prostration of mental and physical power, has lost every vestige of natural affection.

Her stomach, liver, and all organs connected with chyli-fication, are in a corresponding state of torpor; skin sallow, conjunctiva yellow, breath oppressive, bowels costive, muscles placid.

Was immediately subjected to an active emetic, and cathartic course, with counter-irritation.

August 21st. Somewhat improved under this plan—eats more willingly, and speaks occasionally. Hab. baln. tepid. quaque die tert. vel quart.

Aug. 25. No advantage gained by use of the warm bath. Still manifests great disinclination to motion and mental exertion. Hab. baln. pluviale.

Aug 26th. Is considerably benefited by showering—answers when spoken to, and uses food more freely. Repeat shower bath twice a week, omitting, of course, the tepid bath, and using eccoprotics every second day.

Sept. 9th. Under the above plan, she continues to improve—the functions of stomach and liver restored—menses, however, still suppressed.

Omit the above treatment. To restore the functions of the uterus, Hab. tinct. senn. comp. ʒ j. bis in die, et baln. tepid. quaque die 4ta.

Let her also exercise freely, both by riding and walking. Diet nutritive. Under this course, the menses were re-established, and mind restored. Discharged, recovered, in October, between two and three months after admission. This was undoubtedly an idiopathic case of dementia, and not the result of previous excitement, since no such condition existed during any stage of the disorder.

Physicians, particularly those attached to public institutions, seldom witness the incipient stage of puerperal insanity, and this portion of the history of our cases, it is to be regretted, is necessarily either entirely omitted, or very imperfectly delineated.

Among all the causes of insanity in females, no single one perhaps is so frequent, as that arising from the puerperal period. Twenty-five cases of this kind have fallen under our observation at the Asylum, and in order to present them all with some of their more interesting circumstances, they will be arranged in a synoptical table, in which,

1st. The age at which women are most obnoxious to this malady will be seen.

2d. At the birth of which child they are most liable to it;—Whether more so at that of the first, than at that of subsequent children. The former has been asserted. It is probable, that if there be any predisposition to insanity, it is then more frequently developed, than at succeeding births.

3d. Whether there exist any predisposition, either *hereditary* or *acquired*.

4th. The influence of moral causes. On this point, the reports of different physicians are at variance. Thus, some of the English practitioners say, that moral causes are rarely active; while, on the other hand, Esquirol asserts that such causes are operative in the majority of cases which have fallen under his observation.

5th. What may throw some light on this subject, the proportion of *married* and *unmarried*.

6th. At what precise period the first symptoms of mental aberration displayed themselves, and when the broad features of derangement were fully developed. Whether during gestation, or between parturition and the secretion of milk, or during lactation, or immediately following weaning; and what may have been the concomitant symptoms.

7th. The results.

8th. The different forms of this variety of insanity, thereby ascertaining that which is the most frequent.

9th. The comparative curability of these different forms.

10th. Duration of the disease.

In the following table, where blanks are left under the heads of predisposition and moral causes, neither of these circumstances could be discovered to exist.

Number.	Age.	Which Child.	Period of Attack.	Predisposition.	Moral Causes.	Married or Single.	Form of Insanity.	Duration of insanity when admitted.	Continuance in the Asylum.	Result.	Observations.
1	21	1st	Labor 3 weeks premature—delivered by instruments—10 days after, became suddenly frantic	Hereditary.		M.	Mania.	1 Month.	3 Mos.	Recovered.	Treatment—Emetics, antimonials, mild laxatives, warm-baths—Counter-irritants, gentle mental and bodily employment.
2	26 or 4th	3d	Few days after parturition and exposure to cold.	Hereditary.		M.	Mono-mania.	5 Mos.	5 Mos.	Recovered.	Treatment—Emetics, cathartics, counter-irritants, tepid baths, with cold affusions of head, soothing moral treatment.
3	20	1st	Two or three days after parturition.	From injury of the head.		M.	Mania.	12 days.	6 weeks.	Improved.	Was prematurely removed by her friends—taken into the country, during the prevalence of an epidemic fever, and died.
4	22	unknown	Two weeks after parturition, suffered by exposure to cold. Checked state of secretions, inflammation and supuration of mammae.			M.	Mania.	4 weeks.	1 Month.	Removed by friends.	Prematurely removed—her friends supposing she would die; it is believed she recovered.
5	43	9th	Ten weeks after natural labor, and nursing her child.			M.	Mania.	2 weeks.	1 Month.	Recovered.	Treatment—Entire seclusion, quietude, laxatives, warm-baths, gentle tonics.
6	27		Three weeks after parturition.			M.	Mania.	6 Mos.	3 weeks.	Recovered.	Treatment—Active purgation and counter-irritation.
7	20	1st	Soon after parturition.		Supposed the sight of her child, with harelip, had some agency.	M.	Mono-mania.	2 Mos.	4 Mos.	Improved.	She made several attempts at suicide—was removed before she was entirely sane—has since recovered, it is supposed.

8/44	unk.	Immediately succeeding parturition.			M. Mania.	2 mos.	4 mos.	Recovered.	Had amenorrhea and treated by tinct. sen. comp. Tonic treatment.
9/21	1st	Few days after parturition.			M. Mania.	4 weeks,	6 weeks.	Recovered.	
10/25	1st	Two or three days after parturition.			M. De- mentia	3 weeks,	6 days.	Removed	Prematurely—her case was peculiar—was cataleptic.
11/40	4th	Soon after parturition.		Domestic affliction co-operated.	M. Mono- mania.	2½ years.	7 mos.]	Improved.	Discharged, subsequently recovered, no medical treatment, the active stage having passed prior to admission.
12/21	1st	During lactation, preceded by inflammation and suppuration of the mammae.			M. Mania.	2 mos.	6 mos.	Recovered.	Treatment—Counter-irritants, tonics, anodynes, generous diet.
13/27	1st	Soon after parturition.		Hereditary.	M. De- mentia	8 mos.	1 month.	Removed	Prematurely, not allowing time to observe the result of treatment.
14/27	2d	Soon after parturition.			M. Mania.	4 weeks,	1 month.	Recovered.	
15/29	1st	Two or three days after parturition.		Hereditary.	M. Mono- mania.	4 mos.	4 mos.	Recovered.	Suppression of milk supervened upon derangement, remained many weeks in a passive state, and then attempted suicide,—Treatment pil. aloë. comp. exercise, &c.
16/35	4th	A week after parturition.			M. Mania.	Few weeks.	6 mos.	Recovered.	Had a similar attack after the birth of 3d child.
17/29	4th	2 or 3 days after parturition.			M. De- mentia	13 mos.	1 year.	Recovered.	Treatment—Chiefly tinct. iodine.
18/20	1st	2 or 3 days after parturition.			M. Mania.	2 weeks,	2½ mos.	Recovered.	Treatment—Emetics, mercu- rial and other cathartics, anti-mon. counter-irritation.
19/32	9th	Some weeks after parturition, preceded by inflammation of the mammae, which terminated in resolution.			M. Mania.	2 mos.	2 mos.	Recovered.	Treatment—Purgatives, anodines, warm-baths.
20/30		Soon after parturition.			M. Mono- mania.	10 weeks,	2 mos.	Recovered.	Melancholy prior to parturition. Treatment—warm-bathing, tinct. sen. comp. emetics.

Number.	Age.	Which Child	Period of Attack.	Predisposition.	Moral Causes.	Married or Single.	Forms of Insanity.	Duration of Insanity when admitted.	Continuance in the Asylum.	Result.	Observations.
21	38	3d	Succeeded a still-born child at 8 months.		Gloomy on subjects of religion, prior to this period.	M.	Mono-mania.	2 mos.	9 mos.	Improved.	Was removed home in a much improved state of mind, had an operation performed for removal of a large tumor, and died 10 days subsequently.
22	22	1st	36 hours after delivery.		Domestic trouble.	M.	Mania.	2 weeks.	3 mos.	Recovered.	Treatment directed principally to stomach and bowels, alterative calo. cathartics, antimonials, pil. myrrh, &c.
23	19	1st	Six days after parturition.			M.	Mania.	1 month.	5 mos.	Recovered.	Her conduct strikingly characterized by obscenity, so common in this form of puerperal insanity. Treatment directed to stomach and bowels. Tranquillized by baths and antimonials.
24	29	1st	Twelve days after parturition.			M.	Mania.	5 days.	12 weeks.	Recovered.	Was in a low typhoid state; treated by alteratives, cathartics, stimulants, tonics; suffered from diarrhœa, which was profuse, painful, and continued after recovery. Has been subject through life to periodical head-aches.
25	27	2d	A month after parturition.			M.	Mono-mania.	2 or 3 mos.	32 weeks.	Recovered.	Her insanity came on gradually—after some weeks of mild melancholy, attempted infanticide. Though she did not entirely recover while in the Asylum, yet she was so far convalescent, that entire recovery succeeded removal.

Of the above cases,

- 1 was under 20 years of age.
- 17 between 20 and 30.
- 4 between 30 and 40.
- 3 between 40 and 50.

Total 25

Twelve of the cases occurred upon the birth of the first child.

A predisposition to insanity existed in five cases, and in *four* of these it was hereditary—in the remaining one, accidental, owing to an injury of the head.

In none could the disease be distinctly and solely traced to moral causes, and in four cases only could this class of causes be found co-operative with physical causes.

They were all *married* at the period of attack. The exact period could not be ascertained; the largest proportion of cases, however, occurred within 14 days after parturition.

Not a single case succeeded weaning.

One case followed instrumental delivery; and another, the birth of a dead child.

Of the whole number,

18 recovered previous to leaving the Asylum.

6 had so far improved, that their friends thought it expedient to remove them; most of these, it is believed, have since recovered.

1 was rapidly convalescing, but on being removed into a district of country where the autumnal bilious fever prevailed, she was attacked by this disease, and died.

Thus it is seen that the disease has not proved fatal in a single instance, where the patient was under the actual care of the Asylum.

Of those who were cured,

None recovered within				1 month.
7	"	"		3 months
5	"	"	6	"
4	"	"	9	"
1	"	"	12	"
1	"	"	25	"

Total 18

Forms of Puerperal Insanity.

15 were cases of Mania.

7 " " of Monomania.

3 " " of Dementia.

Curability of the different forms.

13 of the 15 cases of Mania, recovered prior to leaving the Asylum.

4 of the 7 cases of Monomania, recovered.

2 “ 3 “ Dementia, recovered.

Corollaries deduced from the preceding cases.

1. That young women are much more obnoxious to this malady, than those more advanced, and that the susceptibility of females to it diminishes in about the same ratio that their years increase.

2. That women are more liable to this disease at the first, than at subsequent parturitions.

3. That a hereditary predisposition to insanity exists in less than one sixth of the cases.

4. That moral causes are co-operative only ; and *that*, but in four cases out of twenty-five. As in part explanatory of this comparatively limited influence of moral causes, it may be observed, that all the patients were married.

5. That a large proportion of cases occurs within a few days after delivery ; and that liability to this disease is found to diminish in proportion to the remoteness of the parturient period.

6. That puerperal insanity is one of the most curable forms of mental disorder.

7. That mania is the most common form of puerperal insanity.

8. And that this is far the most curable form.

9. That two thirds recover within six months, and that in some rare cases, even when the disease is curable, it is protracted beyond two years.

10. That it seldom proves fatal.

ART. III.—Description of an Apparatus for Fractures of the Leg. By N. R. SMITH, M. D., &c. (With a Plate.)

THE principal sources of inconvenience, distress and failure, in the treatment of bad fractures of the leg, I have ever found to be :—1st. The difficulty of giving to the limb a uniform, well-adapted, and slightly elastic support, which shall prevent unequal pressure upon any point on which the limb may rest.

2d. To obviate the rotation of the superior fragment of the bone, in consequence of the power with which the thigh and the body are constantly operating upon it. It is obvious, that when a cumbrous apparatus is attached to the leg, and when this apparatus rests upon a support on which it cannot move with facility, as upon a bed or mattress, no lateral movement of the thigh can take place, without dragging to one side or the other, the inferior fragments,—the leg not moving in correspondence with the thigh and body. The ordinary modes of obviating this, are very ineffectual. Surgeons usually attempt it by closely adjusting the splints which are employed, and giving firm mechanical support to the leg. This will, indeed, generally appear to suffice, when the fracture is below the middle of the leg. The superior fragment is then so firmly sustained, that but little lateral motion can be impressed upon it by the thigh. This, however, is but a compromise; for the efforts will still be made upon the upper part of the leg, and as the apparatus remains fixed to it, the limb will be pressed severely upon some part of it, and almost always the surgeon will discover in the progress of the case, that the leg becomes severely galled at some point, where it is attached to the superior part of the apparatus.

Another and a more effectual mode of obviating this difficulty, consists in extending the splints usually employed along the thigh, and causing them to embrace firmly that portion of the member. The thigh will then be either so confined, that the unavoidable movements of the body will not in so great a degree impart motion to the superior fragments of the leg;—or, when the thigh is made to move, the whole apparatus will move with it to some extent, and thus the motions of the thigh and leg being made to correspond, the fragments will not be so much disturbed. This extension of the apparatus so as to embrace the thigh, is far more effectual in maintaining the apposition of the fragments, than any circumstance in the adjustment of the apparatus below the knee; and it is very surprising, that it should have been almost wholly neglected, till it was justly appreciated by Mr. Amesbury.

Still, however, I have found both the expedients named above to be inefficient for the purpose in view. A patient reposing on his back during the treatment of a fracture, will always, by raising his head and shoulders, unconsciously urge his body lower in the bed. If then motion is prevented in the hip and knee joints, and the heavy apparatus rests upon the bed without easily moving with the body, the upper fragments of the leg will be jammed upon the lower; and this I have learned by

observation to be not only a cause of great irritation, but of distortion and shortening of the limb.

Further:—the apparatus cannot prevent slight rotations of the thigh, when the patient moves himself in bed, unless it be lashed very tightly to the member, a circumstance always productive of much mischief to the limb. It is impossible for any one to remain long in one attitude without suffering distress, even upon the most elastic surface. In the most profound sleep upon a hair mattress or bed, the points of support are from time to time involuntarily shifted. How often do we see the soft parts over the sacrum,—the hips, the spine, sloughing from unavoidable confinement to one position of the body! Confinement to one invariable attitude is also injurious, for obvious reasons, to the healthy functions of various movable viscera, and hurtful to the general health of the patient; consequently to the process of cure in the fracture. Nature, often better aware than the surgeon of this danger, suggests every possible contortion of the body, to avoid the tedium of a constant attitude and continued pressure upon the same points of support. If by this the limb is not moved in the apparatus, it will at least be pressed with force upon some part of the splint which resists its motion.

The galling pressure which is thus inflicted upon the injured limb, as well as that which will in most cases arise from the tightness with which the splint must be bound in order to accomplish its ends, will cause extreme distress and irritation. From this arises not only general restlessness, but spasm of the muscles of the broken limb, producing distortion of the fragments, and shortening of the member.

It would seem, then, that the desideratum in the treatment of these fractures, is to provide an apparatus which shall—1st, give *sufficient support* to the fragments of the broken bones, causing them to preserve perfectly their relative attitudes; 2d, which need not be bound so firmly to the limb as to cause injurious pressure, or impede the circulation of the blood; 3d, which shall give uniform, steady and slightly elastic support to as large a portion of the inferior surface of the member as possible, and which shall especially protect the heel from pressure; 4th, *which shall allow the apparatus and the limb to move with the body*, while, at the same time, the fragments are undisturbed, thus permitting the patient to shift his attitude in bed, and to escape the irksomeness, pain and danger of one unvaried position.

The treatment of a great number of cases of fracture of the leg, happening to the throng of laborers engaged on the Baltimore and Ohio Rail Road—fractures caused by the falling of

banks of frozen earth, the blasting of rocks, the wheels of cars, &c., consequently many of them compound or comminuted, and occurring in constitutions perfectly saturated with whiskey, had made me familiar with the difficulties which arise in such cases, and earnestly desirous of devising something which should accomplish the ends named above. I think that, after many trials, I have succeeded with the apparatus here represented.

It consists of two pieces of half-inch board, an inch and a quarter wide, and long enough to extend from the middle of the thigh to a little beyond the sole of the foot. At the knee, there is an angle in each of about 150° . At the lower extremities they are fastened to a flat thin cross piece of iron, which keeps them fixed about 4 or 5 inches apart. Near the knee is another piece of iron, which fixes the upper part of the splints in the same manner, and at the same distance from each other. This may be a piece of very large stiff wire, but so as to arch beneath the space between the splints, where the leg is to repose. For further security, another may be attached near the ankle. The splints are then to be wrapped with coarse muslin, and all along their outsides pins, or small nails without heads, are to be attached. Pieces of bandage of the ordinary breadth are now laid across the splints, so as to drop in the form of festoons between the splints, and thus to make a concave support for the limb. These strips are fastened at each end to the outsides of the splints, by catching them upon the small nails; they extend from one extremity of the splint to the other, and are applied close to each other.

The apparatus being thus prepared, carefully place the limb upon the cross strips of bandage, and allow it to sink between the splints, till they are opposite to the middle of the leg. Then accurately adjust them to the inferior surface of the limb, so as to give equal and uniform support at every point, by drawing the ends of the strips over the margins of the splints, and catching them on the pins. It is perfectly easy thus to give them that degree of relative tension, which shall adapt the surface of the support accurately to that of the limb, and cause it to repose with perfect equality of pressure.

Compresses should now be interposed between the limb and the splints upon each side. Next, I commonly apply the stiff sole of a shoe to the bottom of the foot, and, taking a roller of considerable length, bind it with a few turns to the foot. The roller is then cast a few times in the figure of 8 form around the foot and extremities of the splints, in order to give more steady support to the foot, and is then to be carried spirally up the leg and thigh to the extremity of the splint. Every turn of the roller thus made, it will be observed, gives additional sup-

port to the inferior surface of the limb, while it gently presses the splints upon its sides, and securely confines it.

Four pieces of strong tape are now to be attached to near the middle of the splint—two on each side, about four inches apart. These are to be brought together about four inches above the limb, and tied together in a knot. They should be extended above the knot two or three inches, and fastened to a support, so as to sling up the limb, and to suffer it to swing clear of the mattress, without touching any thing. The support is made of three narrow pieces of board, fastened together as represented in the plate. The ends which rest on the mattress may have cross pieces nailed to them in the form of a **J**, that they may stand the more securely.

Abundant experience in the use of this apparatus, in the Baltimore Infirmary, has satisfied me that by it the ends desired are very perfectly accomplished.* The support, as must be manifest to every one, is the easiest possible—more so than that of the softest pillow, while at the same time there is no accumulation of heat—the air freely circulating around the member. It is unnecessary to bind the apparatus very tightly, therefore there need be no galling pressure.

But the most important circumstance is *the mobility of the apparatus*, in consequence of which, whenever the patient's body is moved in the slightest manner, the apparatus and injured member move in a corresponding manner, and thus preserve their relative attitudes. As the lower fragments of the broken bones will not be confined at all, they will move together with the superior, and no rotation will be produced. The patient, as I have ascertained by repeated trials, can turn himself from side to side—can raise himself in bed, and adjust his own pillows, without the least pain, or any disturbance of the fragments.

There is a great advantage, also, in the limb's being perfectly accessible for the purpose of dressing, without the necessity of taking away its supports. In case of compound fracture, this is of incalculable advantage. Without moving it in the slightest degree, the whole limb can be exposed and washed. If the slings on which it rests become foul, they can each be taken away and renewed with ease.

* Should any one desire to employ counter extension while using this splint, it is easily accomplished by bandaging the apparatus firmly to the knee, and, by means of tapes attached to the sole which is bandaged to the foot, extending and attaching it to the cross piece which connects the extremities of the splints.

Patients in the Baltimore Infirmary have suffered no pain in the use of this splint—no galling pressure, and but little inconvenience from confinement. Indeed, when it has once been applied, they are so gratified with the comfort which it affords, that they have been unwilling that it should be exchanged for any other support.

ART. IV.—*Remarks on the Physiological Doctrine of Fever of M. Broussais.* By J. WIGGINS HEUSTIS, M. D., of Cahaba, Alabama.

THE New-York Medical Journal, No. 1, p. 209, contains an extract from the Med. Chirurg. Review, in which I was struck with an account of the Broussaisian physiological mode of treating intermitting fever, as practised in the hospitals of France. This discovery of the physiological plan of treatment, may be looked upon by the community at large, as one of the most singular improvements of modern times. Instead of the immense farrago of nauseous medicines, as ipecacuanha, calomel and jalap, and a host of bitters, we find the practice refined to the last desirable degree of simplicity and precision. The ingenious Brown, over whose grave the eloquent Beddoes has so feelingly shed the tear of pity, reduced the establishment of the apothecary almost to a unit, and considered himself fully competent to combat every malady with the lancet, and with opium or wine. Unfortunately, his elixir, like that of Paracelsus, instead of saving, hastened its deluded votary to the tomb. His doctrine, however, gained admirers, and had its day; and it is worthy of remark, that the spark which was struck out by this eminent physician, after having remained so long obscured by the mist and darkness of prevailing error, has again been kindled to meridian splendor, by the masterly touch, and the consummate skill of a Broussais. Some, however, have had the temerity to call the correctness of his principles in question; but such are the admiration and mussulman faith of his disciples, that those who presume to differ from him in opinion, are considered as deserving the appellation of infidels and fools. The fools and infidels, however, appear to constitute no inconsiderable portion of the medical community, and are at least sufficiently numerous to keep each other in countenance, and show a front of resistance.

It is not my purpose to enter into a critical examination of the correctness or incorrectness, merits or defects, of the doctrine of Broussais ; my object is merely to make a few remarks in relation to the subject of what has been commonly, but, according to the physiological doctrine, erroneously, called simple fever. Agreeably to this new medical philosophy, the proximate cause of this, as well as of many other diseases, if I understand it, is inflammation of the stomach and intestines ; that this inflammation is primary, and the fever consequent, secondary, and only symptomatic, as in other instances of local inflammation. The principal indications appear to be, to subdue inflammation, and to remove and guard against irritation. As the disease is local, leeches and demulcents are the essential and leading remedies. And instead of the ordinary medicines of the shop, gum water, or flax-seed tea, is wisely substituted.

This doctrine teaches us that bilious fever, and all fevers arising from miasmatic exhalations, are a high grade of *gastro-enteritis*. Common inflammatory fever, as well as the order exanthemata, are also associated with gastro-enteritis as their cause. Wherein, then, consists the difference between these diseases? We know that most inflammatory affections are caused by vicissitudes of the weather, and by exposure to humidity and cold. These causes are observed in many instances to give rise to parotitis, bronchitis, pleuritis, gastritis, &c.; but the fevers arising from malaria, are produced without any of these causes. If such fevers essentially depend as an effect upon inflammation of the stomach and bowels, then every cause of such inflammation, however produced, must be also a cause of this description of fever. But if instances of such diseases should be known to exist without any obvious symptom of such inflammation, as is often the case, what becomes of the theory of Broussais? Besides, we trace the bilious or autumnal fevers of our climate through various stages and gradations, from the intermittent, or ague and fever, up to the more aggravated malignant bilious, or yellow fever. As all these types depend upon the same remote causes, occurring in the same season, and often interchanging forms with each other, there must, notwithstanding the diversity of symptoms, be a similarity, or identity of nature. In conformity with the doctrine of Broussais, intermitting fever is also a *gastro-enteritis*, or an inflammation of the stomach and bowels, requiring nothing more than gum water, *lavements*, leeches, and poultices to the abdomen, and the like. In cases of what have been considered idiopathic inflammations of the stomach and bowels, the symptoms are so well marked, and so characteristic, that no practitioner of ex-

perience can be mistaken in the nature of the disease; constipation, great pain, heat and burning in the bowels, vomiting, extreme tenderness and sensibility on pressure, hard swelling of the abdomen, difficulty in passing urine, with a fever by no means in proportion to the severity of the local symptoms, and at times an entire absence of all febrile excitement, are unequivocal symptoms of gastritis, or gastro-enteritis; but will it be maintained that the same symptoms characterize intermitting fever? Or, whatever might be the absurdity of theory, would any one be so preposterous in practice as to employ the same remedies in both diseases? It appears to be a fact, and from its frequency, by no means strange or surprising, that when once a physician has set up a favorite hobby, he worships it with idolatrous devotion, using it most unsparingly, and endeavoring to make it applicable to every emergency. Like the vapory invalid, who imagines that he has the symptoms of every disease he may chance to see enumerated in books, so the speculative reformer endeavors to distort the symptoms of various dissimilar disorders, to his particular and indivisible association of fanciful identity. This fierce generalization, and arbitrary assemblage, and grouping together of diseases, without any other affinity or relation, except that which exists in the jaundiced and distorting view of the medical hypochondriac, has been often attempted, and as often entirely failed. Should the theory of Broussais be more successful, we shall look upon him as something more than human.

But to return to gastro-enteritis and intermitting fever. In the treatment of the latter, we know from experience, that quinine is a specific, without the use of any other remedy. If given in combination with the extract of cinchona, it acts as a powerful cathartic, and puts an immediate stop to the disease. But how is this effected on the principle of Broussais, who in gastro-enteritis prescribes demulcents and antiphlogistics? But, in opposition to all physiological speculation, we unhesitatingly and with undeviating success, have recourse to tonics and stimulants of no ordinary power, in the cure of intermitting fever. I presume Broussais would scarcely suffer his theory so far to get the better of his practical experience and good sense, as to employ the same means in gastritis and enteritis of the older systematic authors, that he would in fever and ague. This would be bending practice to theory with a vengeance. If intermitting fever is nothing more than an inflammation of the stomach and bowels, there must be something very peculiar in its character. When an inflammatory affection is once subdued, there is generally an end to the disease, as the result of a well marked

crisis. But let a physician in ague and fever prescribe gum water, leeches, and other means of like character, and the probability is that the disease, if not cut short by death, will continue from May to December. This, I presume, would be called a chronic case of gastro-enteritis, in modern parlance, laying the foundation of great functional derangement, and morbid degenerescence of the mucous surface of the gastro intestinal canal, and calling for the vigorous use of flax seed tea, ice water, leeches, fomentations and *lavements*. But we would ask, what becomes of the gastro-enteritis during the apyrexia, or intermission of the fever? Is it not surprising that this inflammation should so suddenly disappear, leaving no vestiges of its previous existence, and again as suddenly return? Such is not the ordinary course of inflammatory affections. But should it be urged that this is a peculiar form of inflammation, how is the difficulty solved, or in what respect are we made wiser? The term peculiar explains nothing, and is only a subterfuge for ignorance. In order to obviate this difficulty, it has been contended that inflammations are also intermitting. We should be loth, however, to give implicit credence to this position, unless upon clear and satisfactory demonstration of its truth. If it is an essential character of inflammation, to observe periodical remissions and returns, it must be an inseparable accompaniment of all inflammations. But does not daily experience prove that such is not the fact? Who has not remarked cases of pleurisy, hepatitis, &c., continue for several days together, with little or no mitigation? We know this to be the case with external inflammations. In phlegmon, erysipelas and ophthalmia, we discover nothing like the periodical observance of intermitting fever. The same may be said of inflammation of the testicle, urethra, &c. In starting a new doctrine, we should be careful not to throw more difficulties and stumbling blocks in the way, than previously existed; and in order to remove such an objection, the disciples of Broussais will have to explain why the inflammation of the stomach and bowels should observe such exceptions to the general law in intermitting fever, and not in other instances of phlegmasia: and why it is that what they call *gastro-enteritis* is so infinitely diversified. Until this is done, I shall take the liberty of thinking that the doctrine is fundamentally erroneous, notwithstanding its high pretensions to physiological principles and Baconian precision.

It is to be apprehended that Broussais and his followers have mistaken a symptom for the disease itself. This is a great theoretical as well as a very important practical error, like lopping

off a remote branch to cure a canker at the heart. We should consider it very possible, that Broussais, with all his well strung aphorisms and propositions, may be in error, and that his predecessors and cotemporaries were not so egregiously mistaken in their practice as has been represented. But there is a fashion in doctrine as well as in dress, which if not too ridiculous and preposterous in its cut, by being carefully preserved, has often the satisfaction of seeing itself imitated and admired, many times in the course of a century. Other theories, intrinsically evanescent,

Live but to die, and die *not* to revive.

Perhaps Broussais may be more fortunate than any who have preceded him, and that in reality he has untied the Gordian knot; and, in the prosecution of his enterprise, has arrived at the very *Ultima Thule* of medical science, discovery and improvement. Until the contrary shall be clearly proven, it might be unkind to attempt to disturb the faith of his admirers. But the demands of truth and humanity, are stronger than the claims of party favoritism, or the pretensions of individual pride and ambition. We, perhaps, labor under the mistake of ignorance and prejudice; if so, I hope the difficulties to which I have alluded may be satisfactorily explained, so that if such be the fact, there may be no doubt of the identity of intermitting fever and inflammation of the stomach and bowels. These affections have by the ignorant been generally considered different, and their treatment modified accordingly; but we live in an age of wonders and improvements; and the physiological practice promises to be in medicine, what steam and rail-roads are in physics and mechanics.

The following is the article to which I alluded in the commencement of this article. "The writer of the foreign article on which we are employed, who appears to be an offset from the 'physiological' trunk in the Val-de-Grace, in other words, a disciple of Broussais, lays down the following rules of treatment, founded on those which guided that celebrated systematist. 1mo. The first means should be directed against irritation in the system, the removal of which generally removes the fever also. Our author has seen many of these affections, intermittents, yield to antiphlogistics only, at the Val-de-Grace. 2ndo. If the symptoms of gastric or intestinal phlegmasia be present, we should abstain from administering febrifuges in the first instance. 3tio. When the irritation is confined to the mucous membrane of the primæ viæ, it is proper to administer them by the colon, and vice versa. 4to. The febrifuges, especially quinine and its preparations, being used as ir-

ritants, should only be employed in small doses." It will be perceived from these rules, that in conformity to preconceived theory, the attention and treatment are principally directed to irritation of the stomach and bowels. It appears to me that with the same propriety might the views and means be directed to the head or the loins, as these parts, often, and perhaps generally, suffer more in intermitting fever, than the stomach. Were it not for the perversion of theory, it might be considered remarkable, that this practitioner should give quinine such a subordinate location in his consideration, as to place it among the last and inferior remedies of his list; and with an eye still true and faithful to the Magnus Apollo of his creed, and with a head full of *gastro-enteritis*, beholding the monster in every heave and qualm of a sympathizing stomach, still looking upon this sovereign remedy as an irritant, and as such at variance with his principles, he will only consent to its being exhibited in very small doses! More consistent and physiological would be his practice, not to exhibit it at all, even in the minutest portion, but to consider every dose as so much fuel added to the flame of *gastro-enteritis*. Perhaps it will be contended, that one irritation is relieved and cured by another of a different kind, as inflammations of the eye or urethra are cured by white vitrol and balsam. But in these cases, it should be remembered, that these stimulants are principally serviceable in removing chronic weakness and relaxation, and not in subduing acute inflammation. But admitting the postulatam in its full force, that the intermitting fever is nothing more than an inflammation of the stomach and bowels, and that quinine is a specific for such inflammation, unless it can be proven that such inflammation itself observes also the intermitting character, (which, for want of proof, I by no means credit,) admitting then the specific powers of quinine to subdue such inflammation, this medicine should be still more serviceable in the paroxysm, than in the intermission, and equally proper and efficacious in the higher grades of bilious and autumnal fevers. If these several forms of fever all depend upon the same *gastro-enteritis*, by whatever cause produced, they should all be cured by the same remedies. But here, unfortunately, is a knotty difficulty in practice, which will neither bend nor yield to theory.

It is still, however, a satisfaction to observe, that notwithstanding the opposition of speculation and hypothesis, there is among many of the French physicians, much practical judgment and sagacity. Thus we find some recommending eighteen grains of quinine, and some thirty, and even forty grains, in the twenty-four hours, in the cure of intermitting fever. Such energetic

practitioners can surely have but little apprehension of the dread phantom, *gastro-enteritis*.

The same facts and arguments, that are employed to establish the dependence of intermitting fever and *gastro-enteritis*, would also go to prove the same dependence and association between such inflammation, small-pox, and other exanthemata; such a nosological arrangement should, therefore, be followed out by a corresponding adaptation of treatment. That the stomach is often greatly affected in bilious and autumnal fevers, we all readily admit, but still there are many cases in which no such affection can be discovered, from any symptom cognizable to our senses; for instance, the patient has no vomiting, complains of no nausea, or uneasiness of the stomach, and suffers no molestation or inconvenience from pressure applied to the seat of this organ, or to the abdomen generally. Here there is an exception to the rule, or a disease without any seat or proximate cause. According to Broussais, such a disorder must be a phantom, a chimera, a mere creature of the imagination, without a local habitation or a name; and being destitute of family likeness, should be discarded from legitimate society. If the stomach is often more considerably affected in fever than any other organ, this can be easily accounted for, from its known susceptibility to sympathize with the various parts of the general system. Its morbid associations in this way, are too well known to require illustration. To infer, therefore, that because this organ is greatly disordered in bilious fever and other disorders, there must consequently be an existing inflammation of the stomach and intestines, as the cause and seat of these diseases, appears to be arguing from unsound, and at best from doubtful premises. But, perhaps, post-mortem examinations and appearances are appealed to. These are also very equivocal and difficult, and the fact would appear to be, that these supposed marks of inflammation in the stomach, are not more frequently met with as a consequence of intermitting and other forms of autumnal fever, than the same appearances in other instances where this association is neither charged nor suspected. This vascularity, pink, red, and stained appearance of the stomach, is an ordinary consequence of all acute and of many chronic diseases, and appears to proceed more from vascular relaxation, atony and infiltration, than from any degree of acute and active inflammation. As such, therefore, it can afford no argument of particular force and application as expressly characteristic in those diseases. Broussais is doubtless an ingenious and highly talented physician; so also were Hoffman, Boerhaave, Cullen, Brown, Darwin, Rush,

and a host of others, whose theoretical speculations on fever are now looked upon as absurd, obsolete, or unfashionable. So far as theory is made subservient to the benefit and advancement of medical science, by affording rational principles founded upon tried experience and practical observation, it may be innocently and even advantageously indulged, as a healthful exercise of the understanding, and as a relief to the tedium and dryness of arranging and committing to memory isolated facts; but when she sets up her pretensions to infallibility, and makes the experience and observation of years succumb to the fanciful chimera of a dream, or a hypothesis, we have just cause for alarm and apprehension.

ART. V.—*Cases in Surgery.* By DAVID L. ROGERS, M. D.,
of *New-York.*

IN offering a detail of cases in surgery, it is not my intention to observe a systematic arrangement, but to give them from my note book indiscriminately, as they have occurred in practice, or, if more convenient, to state several cases of a similar kind, when they shall have a tendency to confirm a principle, or establish a fact in practice.

CASE 1.—ABDOMINAL ABSCESS.

I was requested, in July, 1830, to visit Mr. Jarvis, a ship-carpenter, aged about 45 years, in connexion with Doctors Baldwin and Rockwell. Mr. Jarvis was a man of temperate habits and of robust constitution. He had for several years been troubled with a reducible inguinal hernia on the left side, for which he had worn a truss. He had been seriously indisposed for several days previous to my seeing him, with what was supposed a constipation of the bowels, and the means usually employed for the relief of such complaints, had been most actively employed by the gentlemen in attendance. I visited him on the 1st day of July, when he presented the following symptoms; countenance indicative of great irritation,—pulse full and soft,—tongue covered with a dark brown sordes,—the skin moist, with a warm, clammy perspiration,—the bowels much tumefied, and painful on the slightest pressure, particularly in the right inguinal region, which was the original seat of pain,—urine high colored and small in quantity,—the bowels torpid, and difficult to be acted

upon, by the most drastic cathartics, although he would occasionally have a small discharge, partaking of the properties of the medicines. The stomach was generally retentive, but was sometimes disposed to reject its contents. The hernia on the left side was soft and natural, and easily returned, and could not be considered as the cause of irritation. This case, from its obscure character, excited much interest; its strong resemblance to strangulated hernia, connected with the fact of his being pre-disposed to that disease, rendered the diagnosis extremely difficult, as some of the most prominent symptoms of strangulated hernia were wanting. The condition of the stomach, the pulse and fecal discharges, offered strong arguments against this opinion.

On closely examining the right inguinal region, at the part where he complained of the greatest pain, a small tumor could be discovered about the size of a filbert, in the immediate situation of the internal ring—but increasing the pressure, it immediately disappeared. As no definite idea could be formed as to the nature of the disease, the symptoms being violent and threatening to prove fatal, unless some relief could be afforded; I proposed cutting cautiously down to the internal ring, to ascertain the character of the tumor, supposing that it might possibly be a section of intestine strangulated, and yet the intestine remain sufficiently pervious to give passage to the feces. It was, however, concluded to postpone the operation until the next day, and to repeat the treatment pursued by the attending physicians as bleeding, warm bath, calomel, enemas and hot fomentations to the bowels.

July 2d. No relief has been obtained by the treatment adopted yesterday; some of the symptoms are much aggravated; he had no sleep, with much more sickness at stomach; tongue black; considerable delirium during the night. The critical situation of the patient admitted of no delay, although the symptoms of hernia were very obscure, and it was doubtful if any existed; yet in his situation almost any practice would be proper, that could offer the most distant prospects of preserving life. With this understanding, I commenced the operation, and performed it in the usual mode of operating for hernia, at the internal ring, in the presence of Doctors Mott, Baldwin and Rockwell; the details of which it is unnecessary to mention. On arriving at the internal ring, we found a protrusion of peritoneum, in all respects resembling a hernial sac. I accordingly proceeded to open it, with all the caution observed in such cases, when, to the astonishment of all present, the moment an opening was made, a volume of most fetid matter rushed out

with a force that projected it two or three feet;—more than a quart was immediately discharged. The mystery of the case was explained; the tumefaction of the abdomen subsided in a few days,—the tongue cleared off,—the bowels became active and regular, and in a month the discharge ceased;—the wound healed, and he returned to his usual occupation in good health.

CASE 2.—ABDOMINAL ABSCESS.

The following claims much interest, as it has some relation to case first, although proceeding from a different cause, and the symptoms being more determinate of its existence. This case came under the care of my friend Dr. M'Caffry, who has obligingly furnished me with its history, which I shall give in his own words.

"Mrs. S., lately from England, residing at 282 Division-street, was, after a tedious and difficult labor, delivered of her eighth child, late in the month of November, 1830. Her lochial discharges, which ceased much earlier than formerly, were succeeded by cough, pain and oppression in the chest, accompanied with fever—which rendered depletion both local and general necessary, which was but in part carried into practice. In the mean time, she was seized with excruciating pain in the right inguinal region, extending through the iliac, sacral and lumbar regions, depriving her of the power of lying on that side, or using the right leg.

"Although there was no swelling, or any symptoms resembling phlegmasia dolens, evening exacerbations and night sweats succeeded the foregoing symptoms—no relief could be given to the sufferer, although attended by two or three respectable physicians for the space of twelve weeks. At this time I was requested to visit her. I found her weak and emaciated, and suffering from fever and sweats. I paid attention to the bowels, and put her upon the tonic treatment, but she obtained no relief. Upon examining the seat of the pain, I discovered a deep-seated tumor, and something resembling a fluctuation of matter. Not satisfied with my own views of the case, I requested the attendance of Dr. D. L. Rogers." According to Dr. M'Caffry's request, I visited Mrs. S., and found her situation much as he has detailed it. The tumor in the side, possessing strong symptoms of containing an abscess, added to the throbbing pain in the tumor, the indistinct fluctuation, and the general symptoms of hectic, I was well satisfied, that Dr. M'Caffry was correct in his opinion, that a large abscess existed in the cavity of the peritoneum. It was proposed to evacuate the matter. To this the patient readily acceded. She

was laid on the side of the bed—partly on her left side. With a common scalpel I made an incision in the direction of the posterior spine of the ilium, between two and three inches in length, dividing the external oblique, internal oblique, and transversalis muscles. On dividing the last named muscle and its fascia, the peritoneum immediately protruded through the opening. With a pair of forceps I cautiously made an opening through it, when a pint of matter immediately passed out. Not having visited the patient after the operation, Dr. McCaffry concludes his report thus:—

“In about five days the discharge entirely ceased, and the wound closed up; her fever and sweats disappeared, her appetite returned, and in two weeks from the discharge of the pus, she was able to pursue her domestic concerns, although she had been fifteen weeks confined to bed, on the day the abscess was opened.”

Remarks.—Having examined several females after death, who died of what Dr. M. Hall would term irritative fever, I have in all such cases, found a large quantity of seropurulent effusion, mixed with flakes of coagulable lymph. In these cases, I have remarked the great abdominal distention by flatus. The sensibility of the intestines being destroyed by the morbid action which is going on around them, it thus happens, that it requires the most stimulating cathartics to affect them. These remarks are intended to direct the attention of physicians to the subject. In many cases, by close observation, we might detect the existence of matter in some part of the abdomen, and by timely discharge, the patient might be rescued from danger. Many practitioners hesitate in opening abscesses within the cavity of the abdomen, preferring to leave them to be discharged by the ulceration of the integuments, when in most cases the patient sinks under the irritation before the process is completed.

This delay proceeds from two causes, equally unfounded and absurd. First, it is believed by some, that wounds of the peritoneum are attended with peculiar danger; thus they prefer avoiding the responsibility, and to leave it to nature. Every day's practice teaches us a different lesson; large hernial sacs are opened, and the intestines returned, tumors of a large size are removed from its cavity, and wounds are daily occurring, in which this membrane is even lacerated, and yet these cases recover without being much incommoded by inflammation. Secondly, it has for a long time been the opinion of most practitioners, that an abscess should have a certain degree of maturity before it is opened, which in common language is termed,

bringing them to a head; others again believe, that abscesses will do best to be left to break of themselves, and to this rule they make but few exceptions. I have been in the habit, for several years, of discharging the matter as soon as I was satisfied of its presence. I believe there is no rule more injurious in practice, than the opinion that matter must be left to approach the surface, and excite a certain degree of inflammation there, before it would be proper to open the sac. The integuments being inflamed, the puncture must be much more painful than in the natural state, and having become thin by absorption, it is much more difficult to heal the wound; and in fact, the integuments having lost their support by the discharge of matter, the edges fall in—a slough follows, and the result is, you have to heal the wound by granulations from the bottom. This is observed in buboes, which are allowed to break, and in abscesses about the face and neck, leaving the most unpleasant scars; whereas, if abscesses are opened early, previous to the integuments being affected, the incision may be immediately healed, by bringing the edges in contact, and the abscess cured by bringing its sides in coaptation, by well adjusted compresses; or should it be necessary to keep the wound open for a few days, no injury will happen to the integuments; the wound will not enlarge, and when the necessity ceases for keeping the wound open, it may be closed, and a simple line will mark its situation. In some cases, the lives of persons are hazarded by this delay in opening abscesses, as when matter is situated under the tendon of the occipito frontalis muscle, or the fascia of the leg, arm and theca of the fingers. In 1829, I examined a man who had a severe attack of erysipelas of the leg; he had recovered from the inflammation, but died of some irritation which was not understood. The head, chest, and abdomen appeared in a sound state; a large abscess was found under the fascia of the leg, which was no doubt the cause of death. But notwithstanding the diversity of opinions upon the subject of abscesses in general, we have but one rule in relation to those within the cavity of the peritoneum, which is, in all cases, the to cut boldly down and discharge the matter, the moment we are satisfied of its presence.

CASE 3.—IMPERFORATE ANUS.

In 1825, I was requested to visit a female child, four days old. The nurse informed me, that the child was of the usual size, and perfectly healthy when born. It nursed well shortly after birth, but vomited in a few moments. Its not having passed any thing per anum, she was led to examine it on the third

day ; an indentation only marked the situation of the anus. It had several times passed urine of a deep yellow color. When I saw the child, it was much emaciated, constantly craving the breast, but never satisfied. The milk would remain in the stomach 10 or 15 minutes, and was then discharged, combined with a large quantity of bilious matter. In comparing the circumstances attending this case,—the rejection of its food so soon after receiving it into the stomach,—its great emaciation, and ravenous appetite—with the negative qualities of flaccid abdomen—its not having been observed to strain—indicative of its desire to have a stool—and the absence of convulsions, led me to believe that an additional obstruction existed, near the pyloric orifice of the stomach. Although firmly impressed with the belief that an obstruction in the upper part of the alimentary canal existed, yet it was deemed proper to give the only chance which art could afford. I accordingly performed the operation ; and in order to make the description more clear, I shall extract some remarks from a lecture delivered to my private class. “The operation for imperforate anus should be performed by placing the child on a table of sufficient height, and the position should be much the same as that adopted for the operation for stone. Examine first the proper situation for the anus, then with a scalpel make a crucial incision, so that the angles shall meet at the proper situation for the rectum ; dissect up the flaps, and lay them over—this will afford more room for the subsequent part of the operation ;—after dissecting up the integuments, you expose the sphincter muscle, this should be divided from above downwards, or in the direction of the os coccygis.*

“By the assistance of a curved pair of spatulas, the parts may be separated to a sufficient extent to continue the operation. Taking the sacrum for a guide, we must cautiously divide the cellular substance, which fills the pelvis, pursuing up its concavity, directed by the fore-finger of the left hand, until we arrive at the top of the promontory of the sacrum, beyond

* The division of the sphincter muscle has been objected to, from the time of Albucasis to the present. He directs “to cut cross ways at right angles, taking heed not to cut the sphincter muscle.” Mr. Samuel Cooper in his *Surgery*, expresses the same fear. He states, page 239, “The whole of this muscle may be cut, and an inability to retain the feces be the irremediable consequence.” I would merely observe, that this fear is ungrounded. If the division of the sphincter muscle should be attended with a permanent loss of contraction of the anus, how terrible would be the operation for *Fistula in Ano*.

this it would be improper to proceed, in consequence of the large vessels. Caution should be observed, not to wound the middle sacral artery below, and the bladder above. If the rectum is within the pelvis, it may be readily distinguished by its elastic, doughy feel. After having ascertained its situation, an incision should be cautiously made through its sides, by a scalpel or bistoury; the opening into the intestine should be enlarged to the greatest extent that its sides will admit of, as it will necessarily contract considerably during the process of cicatrization. After the bowels are well evacuated, a firm tent, composed of linen, covered with oil-silk should be introduced into the opening; this tent should be removed two or three times a-day, to permit the accumulated feces to pass out, until the wound is cicatrized, and the opening permanent. The flaps which we mentioned in the commencement of the operation, should have their angles cut off, so as to fit accurately round the tent, and secured by adhesive straps passing in different directions; by this means a circular opening is formed, and the integuments being brought down, adhere to the sphincter ani muscle; when the tent is removed, the contraction of the muscle will close the anus in its natural form."

The operation having been performed as described above, I found a sac occupying the upper part of the sacrum, which was readily opened with a scalpel. The meconium flowed out in considerable quantity; the wound was dressed, and the child given to the nurse. As was expected, the vomiting continued, the urine flowed in considerable quantity, with the watery discharge from the rectum; the emaciation rapidly increased, and it died twelve days after birth. It was examined six hours after death. On making an incision into the cavity of the abdomen, the stomach immediately presented, of a large size, and filled with air; the enlargement extended to the termination of the duodenum, exhibiting the novel appearance of a double stomach. The stomach was well formed, the duodenum terminated in a cul-de-sac, at that part where it crosses the spine. The small intestines below this were all pervious, but remarkably small, not exceeding the dimensions of a goose quill. The large intestines were natural, as far as the sigmoid flexure of the colon; from that to its termination it was much enlarged.

The rectum was found terminating at the top of the sacrum in a large sac, which occupied all the upper aperture of the pelvis; from this paunch of the rectum proceeded a small tube, not larger than a goose quill, which attached itself to the fundus of the uterus, and passing down, adhered to the side of the vagina, and running out posterior to its mouth, between the

labia; the bladder was much distended with urine; the kidneys were united across the spine, forming an irregular flat body; the right was much the largest, each having its ureter and proper vessels.*

CASE 4.—IMPERFORATE ANUS.

I shall briefly relate a second case of imperforate anus, in which the rectum also terminated in a small tube, by the side of the vagina. This case was completely within the power of surgery, and a permanent relief might have been obtained; but the child was allowed to perish, from the want of attention on the part of the parents. This was the child of Mr. R——, of Watts-street, aged two years. Immediately after birth, a dose of castor oil was administered, and a considerable discharge was the result; the nurse, on washing the child found the labia filled with feces, and on further examination, she found the anus imperforate. This child had enjoyed good health for two years, except when the bowels became costive. From the smallness of the tube, the feces could not pass out without the aid of castor oil once in two or three days; if this was neglected, convulsions would follow. On examining the opening, it was somewhat larger than a goose quill; it appeared to extend upwards, for two inches, and terminated in a large sac; a small depression marked the situation for the anus. I saw the case, with Dr. Brush the family physician, and an operation was proposed for its relief. I was informed by Dr. Brush, that shortly after my visit, the bowels, from the want of attention, became costive, the opening was obstructed, and it died of convulsions.†

The symptoms attending the imperforation of the intestinal canal must differ according to the situation of the obstruction, as, at the pyloric orifice of the stomach, lower part of the duodenum, at the upper part of the colon, or at the anus. The nature and quantity of the matter ejected by vomiting, would most readily indicate the seat of obstruction. If the obstruction is situated at the pyloric orifice of the stomach, it is known by the immediate rejection of the food, combined with the gastric liquor. If at the lower part of the duodenum, it would remain longer without being rejected. The process of digestion is

* The preparations are now in my collection—Nos. 26 and 27.

† Dr. Read, who wrote a book on surgery, in 1686, mentions a case from Fabricius ab Aquapendente, who saw a woman without an anus, who voided her excrements from the vagina.—Book v. page 524.

more complete, and it is combined with bile, which is thrown off in great quantities; if at the head of the colon, the chyle would be discharged perfectly formed; and again, if the anus is the seat of obstruction, the situation of the sufferer is truly disgusting, by the frequent vomiting of filthy feces.*

ART. V.—*An Essay on Small Pox.* By FELIX PASCALIS, M. D., *Permanent Member of the State Medical Society, &c. &c.*†

THERE never was a medical subject fraught with more errors and mystery, than the source or cause of small pox. The first who described this disease was Rhazes, an Arabian physician of the tenth century, who affirmed that it originated among the conquering armies of the Saracens. This assertion has ever since been reiterated, and the belief as confidently adopted, as if it were an oracular declaration of which none dared to hazard a doubt. It is true, that in a later age, it was ascertained, that Christians of the fourth century had seen epidemics of small-pox in Gaul and Italy;‡ and that at an earlier period, the same had existed in the empire of China. Yet, notwithstanding these well established facts, all our schools have adopted the Arabian

* In the *Journal De Medicin* (the volume I do not now recollect) it is related that a child without an anus, grew to the age of manhood without any opening being found for the passage of the feces, which was constantly ejected from the mouth.

† This essay is a translation and revision of a memoir, presented to the Royal Academy of Medicine of Paris, and reported upon, by their order, by MESSRS. MERAT and CHAUTOUVETTE, in an analysis of 17 pages, on the 25th of August, 1830, signed E. PARIZET. In conclusion the reporters say, "this memoir, interesting by its many ingenious views and opinions, has directed our attention to ample details, which are susceptible of extensive remarks, and discussions by the Academy. It may indeed be well perceived, that many observations and opinions of the author are not yet received, and of others, he has not furnished us with sufficient proofs. We, therefore, have thought it necessary for the present, to condense the general plan and theories of the work of *M. Pascalis*. Such as it is, it will always be consulted with pleasure and interest. And we propose that after the examination of the memoir by the committee on vaccine, it be deposited in the archives of the Academy."

‡ *Recueil des Hist. de Fra.* vol. II. page 12.

record, and the most intelligent authorities do still recur to it, for proof of its alleged source. It is, therefore, tacitly supposed that the variolous virus, which had been engendered in the burning sands and deserts of the equator, could not be dreaded in our beautiful temperate regions, except it was from some of its subtle and contagious atomic particles, which were imported and disseminated therein. Thereby an obvious mode of prevention was, and continues to be resorted to every where, and under severe penalties; that is, *interception* and *insulation* of persons, and destruction by fire of any household goods or clothing, which might possibly be infected. Any further investigation or inquiry into the nature of small-pox, has been discarded therefore, like the *grand œuvre* of Paracelsus, or any other pursuit of the alchemists of old.

Numerous difficulties and inconsistencies must result from any theoretical and practical rules, if they are inferred from a false principle, should they be like a *major* proposition only, deduced from a *minor*. Let it be said, for instance: "The virus of the small-pox is highly contagious, in every part of the world, even in the icy polar regions; ergo, it was exclusively engendered under the equator, and from a race of men called *Saracens*." We need not comment upon such a proposition, to make it appear an absurd one. Yet we must confess, that in any composed perception of comparison and judgment, the commonalty of mankind, professional or not, are not always apt to seize upon the bearing or conclusion of a scholastic argument; even if you bring facts, which must have an immediate power upon ordinary understandings. For instance, let us reverse the proposition above offered; "the Saracen conquering armies (Asiatic or African) were the first infected with the small-pox; they communicated it to other nations nine centuries ago; it has even been propagated throughout the inhabited world, as far as the icy polar regions; ergo, the small-pox originated from the *Saracens*." Men of ordinary sense in the community will, no doubt, approve such a conclusion; it offers, however, a two-fold contradiction, the one is the fact of the prevalence of the small-pox occasionally in great assemblages of men, fleets, armies, and that of its constant existence in the large cities of London, Paris, and Constantinople; and the other is, its occasional prevalence, and very destructively, near, or under the Boreal pole, at Iceland and Kamschatka. In this last inference, there is also an additional inconsistency, because we are taught in medical science, that the diseases of warm climates and those of cold regions, must essentially differ from each other.

A medical philosopher, if endowed with reflection and judg-

ment, must confess that the Arabian story respecting the primitive origin of the small-pox, cannot stand the test of his inquisitive mind. But we will find greater difficulties and inconsistencies against the Mahometan importation of the variola, in the history of the sought for relief, or prevention by *inoculation* and by *vaccination*. The first was introduced and adopted in the year 1721, and let it be said with honorable candor, that it was not due to medical science. The world was indebted for it to barbarous nations of Asia, among whom avarice had set a great price on the unblemished beauty of a young female slave, if such a one could have escaped the mutilation of her charms by the small-pox. A prudent mother was probably the first discoverer of the benefit of inoculation, who had observed, that an infant child could survive that cruel disease, without the smallest injury, and who by experience was taught to extend the fair chance to another, by the simple puncture of a pin anointed with variolous matter. Thus were the destinies of many Georgian and Circassian daughters secured for the seraglios of eastern potentates, or for the harems of their ministers. A woman, too, and a mother, introduced the inoculation into Europe.* The observation is fresh in our memory, of the great proportion of faces scar-seamed, and mutilated by the small-pox, and which the process of inoculation has gradually done away, after seventy years of its general use and practice. This benefit, however, far from delivering men from the dread, and from the prevalence of the small-pox, had rendered them somewhat more frequent, owing to the proportion of unprotected classes in a community, which had been exposed to incessantly renewed sources of infection, until at last the vaccinal prophylactic was introduced about forty years ago.

1. Let us now be permitted to notice, what other inconsistencies are involved in the belief of the Arabian origin of the small-pox, in relation to inoculation. It was not defined by *Rhazes*, whether this virus was animal or not; it might have been fairly stated, that it was from men, beasts, or plants. If the first, it might have been a relic of that plague in Egypt, to which the Jews had long remained subject, and is described as producing serous pustules and scabs on the skin.† As for the other sources, we are in an age so much advanced in natural philosophy, that we can safely vouch for the innocuousness of minerals or of poisonous plants, as capable of engendering the small-pox. Taking, therefore, our inference from the first scriptural docu-

* Lady Montagu.

† See Exod. ii. 8, and Job

ments, and concluding that this virus originates from animal matter, why should we refer its formation in the human species, so far back, as nine hundred years? What necessity for us to point out to one nation of warriors alone, and especially to one, which by the mighty progress of their arms, are proved to have been eminently possessed of bodily strength, courage, and of all the vigor of health? If the variolous virus has once been formed among a certain race of men, why should it not, under similar circumstances, be created in another? Are there not in all climates and populations, receptacles enough of putrefaction and of causes of diseases? Has not experience shown us already, a variety of fatal or very dangerous cases, under the denomination of *hospital fevers*, of *hospital gangrenes*, &c.?

By inoculation, the variolous virus is used in a concrete and visible form. However small is the parcel of matter inserted, it is well known that great quantities might be collected from a variolous patient, whether in a dry or liquid state, and that the whole of it has been furnished by the blood or humors, which have been *assimilated* into the nature and condition of the virus.

But the law of nature, which thus converts human blood and lymph into a poison, is the same which developed it in the body of the first Saracen of old, who is supposed to have infected succeeding generations. It, therefore, should not be singled out as derived from one section of the family of mankind; it is emphatically an appendage of the whole human race. This law, we have said, is a law of *assimilation* of pure animal fluids, into the nature of an impure leaven; we further affirm, that this law is equal to the *generation* of the primitive virus, not only because contact or admixture creates it anew, but because it becomes inert in other animals; if, therefore, it is exclusively *assimilated* by human fluids, it exclusively belongs to the human species, of all times, all ages, and countries.

The application of the vaccinal virus, as a prophylactic of the small-pox, and which is derived from another sort of animals, will also afford considerable support and authority to the present argument.

That discovery was greeted like a prodigy! It commanded the admiration of the civilized world, as well as that of all barbarous nations, which from immemorial times, had equally suffered the destructive and mutilating powers of the small-pox. Public authorities, every where, liberally contributed to benefit by it, not only their own subjects, but all human beings. This was the first triumph obtained by the medical art, over one of the most cruel and loathsome diseases. "There is then a

well ascertained prophylactic or antidote of the small-pox," exclaimed a biographer of Jenner,* "while we remain yet unacquainted with the true origin of the so-much dreaded small-pox!" This highly beneficial discovery cannot, however, extirpate the variolous scourge, in favor of all that have received its influence, but it modifies its attack, mitigates its deadly malignity, and weakens its virulence, nearly to the degree of ordinary varicella, which is resolved in the human system, without fatality or any cutaneous corrosion. Such operation discloses a great analogy of action in the two viruses, upon the human constitution, although they are very dissimilar in their origin, and in their symptoms. In explaining, hereafter, the natural laws which govern both diseases, we shall have occasion to show, that there is no other *specific character* in the small-pox, but one coinciding with the pathological condition of the human system in a great variety of diseases. The following are the divisions of the present essay :

1. On the nature of the animal and human effluvia, which constitute the variolous virus.
2. On their operation on the human constitution, when absorbed through mucous membranes, or by the respiratory organs.
3. The *epidemic variola*, the *artificial* and *vaccinia*.
4. The physiological causes of the prophylactic power of all variolous diseases, and of the different degrees of this attribute.
5. Modes of prevention against the formation of the variolous virus.

QUESTION 1. *What is the origin and nature of the poison, or virus, which constitutes the small-pox?*

There are a variety of diseases, in all parts of the world, and among all races of men, which are caused by miasmatic exhalations from the soil, from marshes, or from stagnant waters. Their forms, or pathognomonic symptoms, are always the same, in different places and seasons. They prevail at certain periods, during which a greater quantity of vegetable matter is decomposed, exhaled, and evaporated. These are *intermitting fevers*, occurring at regular periods of time, with chills and sweating paroxysms. Whatever may be the *modus operandi* of this unwholesome influence upon the human system, we are not at present obliged to explain, but to remark only, that between this class of diseases and the variola, there is no kind of analogy or resemblance.

* Eulogy on Jenner, by Lewis Valentin. M. D.

2. There are other and more aggravated forms of fevers, because they are occasionally very mortal. They are also miasmatic, and prevailing during the autumnal season, in all regions of extensive marshes, where they greatly diminish or depress the population. Probably the admixture of animal, or of putrid matter with the detritus of vegetable substances, constitutes their occasional malignity. A higher degree of temperature, together with the prevalence of certain winds along the Mediterranean shores, long ago established the name of *malaria* for the fevers of the Pontine marshes in Italy. They are, like our *lake*, or *autumnal bilious remitting fevers*, to be much apprehended after long rainy seasons, or unusual freshets or overflowings of rivers. However much diversified may be the characters or symptoms of these fevers, it is certain, that they never offer any kind of exanthem or eruption, and that in no part of the world, do they ever exist simultaneously with any kind of *variolous* disease.

3. The unclean and crowded places of resort, hospitals, jails, and ships, may become also the sources of miasmatic exhalations, or of animal effluvia, and engender fevers of great malignity, that often baffle medical art and experience. The typhoid fevers, gravior, and mitior, are eminently of this description, whether rapid in their stages, or tedious and protracted under deceptive appearances of recovery; they prove in the human system, the presence of a deleterious element, which gradually prostrates all vital powers and functions; undoubtedly it is an animal effluvia, or a virus, exerting its influence principally upon the nervous system. The atonic typhus fever, which rages as an epidemic, has not inconsistently been judged *contagious*; yet its occurrence in large populations or assemblages, during calamities of war or of famine, and under a season rendered inclement by cold or by rain, might justify the opinion that its specific cause, whatever it may be, is merely LOCAL. There is no kind of eruption to be seen in the march of this disease, and the more mysterious is the source of it, the less would we be inclined to adopt it as one of the small-pox, or of any variolous disease.

4. We come to the *yellow fever*. But we cannot class this with miasmatic diseases, from which it essentially differs by its most ordinary occurrence in ships at sea or in ports, and in maritime cities, at the *maximum* of summer temperature, during which all exhalations are rapidly absorbed; and at sixty degrees, its prevalence terminates, or seldom can be reproduced; which facts are the reverse of any of the class of diseases above described. Again, the yellow fever maintains so great an identity of symptoms, that we justly infer its productive cause to be, in

all climes and latitudes, always the same. Every where, it seizes the most plethoric and healthy, prostrates the organic powers of respiration, abolishes the supply of caloric from them, and so far interferes with the laws of respiration, that besides the supply of animal heat, the lungs are deprived of the elimination of carbon and hydrogen, by the presence and admission of a heavier gas than atmospheric air; that is, *carburetted hydrogen gas*. The element which creates yellow fever is, therefore, neither a miasma nor a virus, but a gaseous compound; the product of putrid fermentation of vegetable, as well as of animal substances. It is so chemically assorted by the affinities of its constituent principles, that with the aid of a sufficient temperature, it may be obtained from a piece of rotten wood, or of rusty iron dipped in salt water!

The above imperfect exposition of the nature of miasmatic, typhoid, and other sorts of malignant fevers, cannot furnish us information sufficient to come at the nature and origin of the small-pox; but our inquiry may perhaps be more successful, by turning our attention to the laws which govern animal secretions or excretions, and the formation of animal *poison* or *virus*.

There are animals among reptiles and insects, which possess for various purposes, the power of forming and inflicting some liquid poison or virus, which proves deadly or dangerous to other animals. This power is not given to man; yet it is very well known, that certain human excretions, from even healthy bodies, can in a little time acquire such a degree of virulency, as to excoriate, or ulcerate, the parts they are put in contact with. Hospital practitioners can testify, that the effluvia alone from these deleterious secretions in the proximity of wounded patients, are capable of exciting spontaneous mortifications. In anatomical amphitheatres, instances are not rare, of unguarded dissectors falling victims to their useful labor; and still more frequent are the fatal effects of exhumation, at certain periods of the decomposition of dead bodies.*

Such poisons or viruses, spontaneously formed or combined by affinities, resulting from animal secretory organs, must frequently be formed in numerous assemblages of men, as, for instance, in fleets and armies. Some of them have the property of assimilating any living matter, or circulating fluids; the same, consequently, can be reproduced or multiplied from men to men, without interruption; and if it can be extinct during a long

* See Vicq d' Azyr : Pascalis, Danger of Interments.

space of time, the chances are numerous, by which it may be renewed by natural causes, or by importation. No doubt, the oriental plague, syphilis, herpetic, and psoric eruptions, the variola and varioloids, and perhaps the *hydrophobia*, appertain to this description. On the last we express some doubt, there having been much authority to class variolous convulsions with tetanic affection.* Other animal viruses, instead of being reproduced by assimilation, are transformed into singular and anomalous exanthems, and may gradually disappear from the too large catalogue of incurable disorders; such are the *lepræ* and the *elephantiasis*. Another characteristic of an animal virus, is, that its determination and fixed ravages on any part of the body, such as a *cancer*, a *carcinoma*, or a *fungus hematodes*, are not yet sufficient to prevent succeeding attacks of the same, although they may be successfully extirpated. The cancerous virus yet exists, and proves mortal, unless the same branching corrosions, which have been thought to be living hydatid, are extirpated, &c. We must also remark, that one animal virus is not, nor cannot be remedial to destroy or neutralize another. The partial preservative power of the vaccinal matter against that of the small-pox, is derived from a certain pathological circumstance, of which we will hereafter speak. The celebrated *Edward Valli*, of Mantua, completely failed in his experimental attempts, throughout the dominions of Turkey, to modify the plague either by the *variolous*, or by the vaccinal virus.† Let us conclude, by repeating, that there are three sources of animal virus:

1. Living and healthy bodies;
2. Diseased bodies;
3. Dead bodies in a state of putrefaction.

The first are, as we said, reptiles, insects, and wild or diseased quadrupeds, and cause the following effects on the human system; inflammation, ulcers, exanthems of various species, convulsions, rabies, and death. But in any case, the virus which originates from animals, (*hydrophobia* excepted,) is not proved to be contagious in the human race.

The virus from diseased bodies, excites pustular or vesicular exanthems, sanious ulcers, and causes slabby discharges, and ultimately gangrenous sores. This kind of virus is highly volatile and contagious, as appears by the frequent occurrences of spon-

* See Nysten, Nacquart, and Corvisart.

† See Med. Repos. N. Series, Vol. III. p. 362.

taneous mortifications in large hospitals of Europe, called *pourriture d'hôpital*.

In fine, the effluvia from dead bodies engender a truly pestilential virus, which is manifest by various kinds of pustular affections and abscesses; it is very volatile and contagious among the human species. We doubt not, that the variola or small-pox arises from this source of animal effluvia, intensely condensed into virus. Instances are at hand, to show cases of small-pox created by careless or accidental exhumations, and from dissecting rooms. The late researches into the origin of the plague in Egypt, have established to a certainty, that there, the plague is in proportion to the overflowing of the Nile, which annually deposits on the ground, an immense quantity of dead animals, and reaches all the receptacles of the dead in cities and villages. In the succeeding pages, we will show, that the purulence of variolous pustules, is equal to the ultimate gangrenous secretion of this, and of the preceding named viruses.

QUESTION II. *On the introduction of the variolous virus into the human constitution, through mucous membranes, or by the respiratory organs.*

There is a law manifest in all inanimate matter, which, under different degrees of attraction, adhesion, or affinities, condenses and hardens all substances, whether they are homogeneous or not; hence the various forms of crystallization for the first, and strata from deposits of the others. This law is the *atmospheric pressure* upon the globe of the earth. It is estimated according to the surfaces upon which it is exercised; and the smallest extent of a cubic inch, bears up a pressure which is equal to the weight of fourteen pounds. But there is a law, also, which governs animal life, from the smallest insect, up to the most perfect being. The circumambient *pressure* of the atmosphere upon animals has, however, a more complicated operation, than that which is exercised upon inanimate masses, because it can generate *motion*, without which there can be no life in nature. By this motion, we do not mean that which is locomotio-external, or the consecutive result of the volition of animals; but we advert to that *motion* only which is internal, independent of the will, and constitutes the machinery of organic life. To create that *motion*, the supreme wisdom of nature wants nothing but the intervention of a vacuum in an organ of the animal into which a column of air can rush, under a pressure equal to all that which is exercised upon the whole surface of the human body. In that case, there will be equality of power contending in the body which is going to be animated, equal to the pressure of the at-

mosphere on the whole surface of the same, and equal to many hundreds or to several thousand pounds. Now, if by this compression and by other causes, it should happen that a part of the internal atmospheric air can be decomposed, there will instantly be a vacuum made, which must again be filled up, and replaced by the compressing atmosphere, and there will be *motion* generated by successive oscillating contractions and expansions; and this motion will be propagated to the circulating fluids, from one point to the other, altogether, with concentrated heat, which will reach every part of the body, and sustain life by certain attributes and conditions thus given to the said fluid from the moment of birth until that of death.

We have thus explained the phenomena of respiration, effected by atmospheric pressure, better to prove to our medical readers by what a peremptory law, any floating poison or virus in the atmosphere in which we breathe, is soon put in close contact with our fluids, whether such poisons are chemically constituted, as the result of other animal productions, or as a simple aggregate of volatile deleterious effluvia.

In either way, the evil is threatening, and is so active, as frequently to strike our senses, although it is invisible, because we exhale from our skin as much as we absorb; and equally so by the organs of respiration, which are all lined with mucous and porous membranes; besides, other affinities or attractions may govern the infliction of *febrile, inflammatory, typhoid, intermittent, malignant, yellow fever, pestilential, syphilitic, and variolous* virus. Among our domestic animals, we gather proofs, still more evident, of the infinite divisibility of matter, or of animal effluvia, which safely guides their instinct either for prey, or for their reproduction, or for defence against their foe, or for the performance of such labor, or service to men, as they are able to render or submit to.

It may be objected, however, that our existence is protected against all volatile impurities, which may occasionally strike our senses, by a spontaneous and convulsive organic resistance, which causes cough, sickness, nausea, and such irritating sensation, as to produce a rejection of the contaminating virus! This may be true to a certain degree, whenever respiration is absolutely impeded by pungent, ammoniacal, or sulphurous vapors; but habit will wear out the delicate functions of the nerves of our senses, as happens in various necessary occupations, among anatomical dissectors, grave-diggers, slaughterers; yet these are not all preserved by the care, and preservatives which they may take, and many fall victims to the dangerous effluvia, in which they are immersed. We have read of and

known various epidemics, from peculiar kinds of virus, which have affected some of the organs, at first, and yet proved generally fatal or destructive of others. The most modern in our recollection, was the *ophthalmia* of Egypt and Syria, after the invasion by Napoleon, and which proved so distressing, by the destruction of one or both eyes. The same reached the coast of the Adriatic sea, as far as Venice. Another was a terrible attack of the *croup*, in Mantua and the neighboring cities, which during many centuries previously, had but rarely occurred. A third took place repeatedly in London, during the sixteenth century, (a very pestilential period in Europe,) which was called *sudor anglicus*, attended with great mortality, from the exhausting sweats it excited in the patients. But a still more singular kind of virus prevailed in Rome and France, under the pontificate of Gregory XIV., 1563. It caused a malignant catarrh, which was invariably ushered in by a convulsive *sneezing*. At that calamitous time, public prayers and humiliation were universally offered by the pope. Every survivor having witnessed the fatality of *sneezing* in some of his friends and relations, it was natural to give a blessing with a last farewell, to any person seized with sneezing.* This custom has continued many centuries after the epidemic. This singular variety of operation in the human system, of the same kind of poisonous effluvia, proves to us two material circumstances: one is, that the character or nature of one kind of virus, once introduced into the human system, is never varied in the morbid effects which it produces, in spite of age, sex, or constitution; the other is, that from the rare occurrence of the last mentioned epidemics, compared to the frequency of the small-pox, we may verily infer, that the source is never distant from us, from large assemblages of men, in populous cities, ships and armies, and in all receptacles of human effluvia.

This very common disease, which all observers and medical writers have declared to be the destroyer of one fourteenth part of the human race, and one fifth, or one sixth, or one seventh, of all those who are attacked by it;† this disease, we say, is a subject full of undescribed mysteries and contradictory effects, which nobody seems to have attempted to investigate or to explain.

1. For instance, it is so far the complaint to which every individual is liable, that the probability of life from infancy to manhood, would be considerably lessened, *unless its operation*

* See Med. Repos. new series, p. 148, Vol. v.

† See Fracastor. Sennert. Riverius. Sydenham. Chirac. Dumolin. Boerhaave. Mead. Vernage, Valentin, &c.

had taken place ; yet on the most severe calculation in a general statistical proportion, the same can be said to be no more than one seventh ; or of all kinds of population, lately found and reduced to one fourteenth.

2. Its virus is so subtle and contagious in large communities, that a complete seclusion from, or removal of the infection, is absolutely necessary. Yet the matter of small-pox is inert upon many, and upon those who have fully experienced its effects ; and is alone its own and best prophylactic.

3. The operation of the variola, by its pustular effects, is gangrenous and mortal ; and yet it has never produced any other kind of exanthem, as a characteristic or pathognomonic symptom of its malignity.

4. Different from diseases incident to all ages, sexes, and constitutions, it proves benign and rarely mortal during infancy ; but is hazardous and often fatal among adults and in old age.

5. In fine, it is deducible from medical observation, that variolous pustules do not occur, unless on the external cutaneous surfaces ; yet the fetus of a gravid woman, who recovers from the small-pox, bears evidences enough, of the pustular, and perhaps of the deadly exanthem !

QUESTION III. *On Epidemic or Natural Small-Pox, Varicella, Vaccinia and Varioloid.*

We have already said, that by inoculation, or by artificial introduction of the variolous virus into the human system, the natural disease would be mitigated ; it is, therefore, obvious, that in either case, there will be a remarkable difference of essential or necessary symptoms ; and as their exanthematous character is unexceptionably *pustular*, the form and nature of respective pustules will remain to be the criterion, or the prognostic of each variolous division, as they must ultimately prove the preservative power, which the human constitution could receive in any one of them.

In the milder forms of variola, we perceive that there are three sorts of pustules ; 1. the *cutaneous* ; 2. the *tubercular*, and, 3. the *dry* ; two others, far different, appertain to the epidemic or natural small-pox, to wit. : 1. the *miliary* pustule, and, 2. the *vesicular*. As for the *vaccinal* pustule, since the virus which constitutes it originates from the brute creation, it is not surprizing, that its nature and form should be *sui generis*, dissimilar to any sort of eruption ever observed on the human body, because in no part of the world, or races of men, has it ever changed its appearance, or its well known character, that of size excepted.

The *cutaneous pustules* are either *confluent* or *distinct*; if the first, they are numerous, and grouped, so as to run into each other, by which they form distinct masses; and the fluid they contain, having united at each point of contact, they present large purulent masses painful and unsightly, dispersed over the body, especially over the face, or parts ordinarily uncovered. They are, therefore, difficult to bring to desquamation, the more so, that being raised from the cutis vera, they mutilate it by corrosions equal to the tissue from which they are emerged. Hollowed indentures and seamed scars are, in case of recovery, the least evil, or perhaps the loss of one eye, left to the many sufferers, with whom we so frequently meet to this day.

The *distinct* pustules are also raised from the *dermos*; are more regularly round and of an equal size, and readily brought to maturation, by whitish or yellow matter, showing a point of depression in their centre, and not unfrequently a red areola; if not very numerous, they successively turn brown or dark, as they more or less rapidly change. From imprudent management, or other untoward causes, if very numerous, such pustules may suddenly flatten and turn purple, and thereby prognosticate death. This kind is met with in the epidemic, the natural, and the inoculated small-pox.

The *tubercular* pustule defines clearly its own nature; hard, conical, of various size, and confining its maturation to the apex. Should the disease happily resolve, the desquamation is easy, but it leaves behind a kind of red tubercle, which insensibly collapses. This pustule, however, is not existing alone; it is simultaneous with at least the *distinct*, and with the *vesicular*, which we shall describe hereafter; it invades the extremities of the body, sooner than the centre. On the whole, we judge it to be an imperfect eruption of the variolous matter, not affording a sufficient elimination of it.

The *dry pustule* is thus called, because it admits no lymph before maturation; has seldom any pus, and still more rarely, can any matter ooze from it; it rapidly sinks and dries up, by a very slight cuticular desquamation; it never is the means of a dangerous repulsion or revulsion of the variolous matter. It is the predominating pustule of the varicellæ and varioloides; and it appears to constitute all *secondary eruptions*, particularly those of persons already prepared by the real disease, through inoculation; when it carries with it considerable pain, burning sensation, and inflammation, which, by patience and prudent management, are overcome in a few days.

Such are the pustules of the milder forms of this disease. We will now concisely describe those which appertain to the *epidemic virus*, received or absorbed by an unprotected constitution.

The *miliary pustule* is preceded by a general turgidity of the dermoid system; by its discoloration, red, inflammatory or sunburn hue. They are innumerable, and very small on every part of the body. To give an idea of the sensation felt by the hand, which is passed over the skin, we must recur to the handling of a cold piece of shagrin.

It is obvious, that a miliary, or innumerable collection of pustules, cannot extend over space enough for any progress of maturation; in fact, shortly after their appearance, the patient becomes torpid, seems to grow insensible, and each day is a fast approach to death. Dark, large discolorations of the skin, are seen as the signs of a diffused variolous gangrene; the fetid exhalation of which is progressively perceived. The case is thus resolved in five or seven days, without groans or pangs.

The following fact of a spontaneous and fortunate change, which may arrest the fatal tendency of the miliary pustules, we think necessary to mention, because we have seen it occurring several times in young subjects, and it might perhaps be induced by some artificial process. It is the formation on all parts of the body, of large *phlyctenæ*, or vesicular pouches, seemingly of that kind which the ancients have called *pemphigus* or *pemphigode*. They are pendulous, transparent, irregular in form, and from a half-inch to one inch in diameter. They appear filled with an ichor variously colored, which easily discharges itself throughout, thereby relieving the adjacent miliary pustules, some of which disappear, and others assume the *confluent* character; in this favorable change, with the aid of well adapted tonic potions, and the benefit of pure air, the recovery of the patient can be depended upon.

Vesicular pustules are formed in groupes or masses, like the confluent; but they take longer time to become purulent, and they are of an ash color. Although joined together, they do not pour their fluid into others, with which they only remain in contact; and if it is attempted to empty them by pricking, one only can be emptied at a time. It is remarkable, that none of them show a central point of depression. This pustule, in short, is of a bad character; for it never occurs in the variola by inoculation; in no kind of varicellæ, of varioloid nor of secondary pustular eruption, but is a variety of the epidemic small-pox.

There are other peculiar symptoms combined, or occurring in the same, and which particularly indicate the presence of the

virus. These are, swellings of the extremities, of glands in the joints, in which abscesses are formed, which must be brought to suppuration, and with this, the adjacent bones are subject to caries, &c. These occurrences were witnessed by us in New-York, in the variolous epidemic of 1816 and 1824; but they have been minutely described by the late Dr. *Louis Valentin*, who long resided in Virginia, and during a severe epidemic of small-pox in Norfolk, which he has described in his learned *treatise on inoculation*.

We suppress farther details on all kinds of *varicellæ*, observing that however great may be their modifications, according to time and place we believe them to be ascribable to the same animal virus; for we could not be refuted, were we to advert to the fact, that there never was a severe epidemic of the small-pox, but it was accompanied by some kind of *varicellæ*. These, however, may also actually have been a modified result of the prevailing influence effected by the *vaccinal prophylactic* previously received in the human constitution; it was, we think, under such circumstances, that the varioloid, was first identified.

The vaccinal influence, no doubt, possesses a partial prophylactic power against the operation of the small-pox, although inferior to that of the same intensity. An inquiry into the causes of this physiological phenomenon, will be the subject of our next section.*

[To be Continued.]

ART. VI.—*An Essay on Delirium Tremens*. To which the ANNUAL PRIZE for the year 1831 was awarded by the Medical Society of the State of New-York. By JAMES CONQUEST CROSS, M. D., of Lexington, Kentucky.

“ Quid non ebrietas designat? Operta recludit,
Spes jubet esse ratas, in prælia trudit inermem.”—*Horace*.

ARTICLES of a distilled or fermented character have exerted a most deleterious influence upon the physical, moral, social

* We understand, that the Philosophical and Literary Society of *Evreux, Depart. de l'Eure*, in France, have granted a premium to *A. Barrey, M. D.*, for his memoir *De l'Appreciation de la Vaccine*. This work will, no doubt, either confirm or invalidate some of our views; but we have not as yet met with it.

and intellectual nature of man, in every age of the civilized world. Among the multifarious evils which they have produced, particular attention has been recently directed to a singular and frequently fatal disease, denominated *delirium tremens*. Although of common occurrence at present, it is difficult to discover, in the records of the profession, very distinct traces of its existence, earlier than the commencement of the nineteenth century. That it must, however, have existed in the remotest periods of recorded history, must be admitted, when we recollect that stimulating liquors were in familiar use in the days of Homer. We read that the sparkling Meronean and the rosy Parmenian were then in much request. Even the venerable Nestor did not refuse, on some occasions, to indulge more freely in their use than was consistent with rigid temperance.

Fermented liquors are not so productive of *delirium tremens* as those that are distilled. It is consequently of much more frequent occurrence in Holland, Germany, and Westphalia, than in the more southern parts of Europe. It cannot occasion surprise that this disease should be very prevalent in the United States, when we are told, as the result of accurate computation, that there are 400,000 drunkards, 30,000 of whom die annually of intemperate habits. Nor is this disgusting and destructive practice limited in its sphere of deleterious operation to the more subaltern walks of life: the learned professions furnish their quota of victims annually at the shrine of Bacchus.

Literary history of Delirium Tremens.—This is absolutely necessary, that we may be enabled to determine with precision the exact point which we have reached in the investigation of this disease. Without it we shall be unable to detect and expose fraudulent claims to originality of conception in theoretical deductions, or unfounded pretensions to important practical improvements. A *coup d'œil* of the amount of information furnished by the practitioners who have already written on the subject, will also enable the reader more easily to determine the extent to which the author aims at advancing our knowledge of the nature and treatment of this important disease.

While it is perfectly evident that this disease must have been occasionally presented in the extensive practice of the illustrious Hippocrates, and have been amalgamated and confounded by that clear-sighted genius with other affections, it is equally clear, that as a distinct and independent disease it was not described until the year 1801. The author to whom we are indebted for the first attempt to distinguish it from all other

maladies, is Dr. Samuel Burton Pearson. His tract was not, however, designed for extensive circulation; it was circumscribed to the circle of his personal acquaintances exclusively. To make it more generally known to the profession, it was reprinted in the year 1813, in the *Edinburgh Medical and Surgical Journal*.

The great excellence of this paper consists in the daring enforcement of the opium practice. With this narcotic the author had a success which has never been equalled by any subsequent practitioner.

Evidence, however, derived from sources of unquestionable veracity, has been accumulated, which tends to establish the fact, that Dr. Pearson did not originally have recourse to this article in the treatment of delirium tremens. It appears, from a letter written by Dr. D. F. Condie, to Dr. B. H. Coates, that our countryman, Dr. Adam Kuhn, of Philadelphia, pursued this practice "from his first entrance upon regular practice in 1783," and that he seldom failed "in putting an end very speedily to the disease." While this statement is justly due the memory of Dr. Kuhn, it is not our design to intimate that there was an intercommunion of opinion between him and Dr. Pearson, or that the practice of the latter was adopted from any suggestion made to him by the former. To another individual, however, it is very probable Dr. Pearson stands deeply indebted. This physician resided at Newcastle-upon-Tyne; and we are informed by Dr. Armstrong, that it is a fact of vulgar notoriety, that Dr. Young, who lived there, also treated delirium tremens "by opium, long before Dr. Samuel Pearson resided there."

In 1807 Dr. M'Whirter, of Edinburgh, physician to the Newcastle Dispensary, published in the *London Medical and Physical Journal*, two distinctly marked cases of delirium tremens, and one of palsy, that proceeded from the sudden abandonment of the excessive use of ardent spirits. It must occasion surprise, that no author who has treated of this disease, has ever alluded to this individual, especially when it appears, that he was familiarly acquainted with the efficacy of the remedy so successfully employed by Dr. Pearson; the state of the system in which this disease most commonly occurs; and the deleterious consequences to be apprehended from the antiphlogistic plan of treatment. This writer speaks of the danger of suddenly suspending the use of ardent spirits, as if it were a fact familiarly known. His reliance was exclusively upon opium, in regard to which he says: "Experience, independently of theory, has approved of the practice detailed." Of the treat-

ment, the antipodes of this in every respect, he remarks emphatically, "I have been also well assured, that where blood-letting, blistering, and abstinence, have been prescribed, the patients have to a man died."

From the pen of Dr. Armstrong, the public has been favored with three separate and distinct papers on the subject of delirium tremens. The first appeared in 1815, in the *Edinburgh Medical and Surgical Journal*; the second, the same year, and in the same periodical; and the third, in 1816, in his immortal work, entitled, *Practical Illustrations of Typhus Fever, &c.* The chief design of the first, we are told by the author, was "to awaken the attention of the faculty to this disease." His principal reliance, we are informed in this paper, was upon laudanum, and a few unimportant auxiliaries. Under this treatment, of fourteen cases, three proved fatal. He also acknowledges himself indebted to Dr. Pearson's tract, "for any thing like an accurate description of the disease." The second publication contains the history of two very interesting and instructive cases. In one, the efficacy of laudanum is illustrated, and in the other, the evil effects of corporeal coercion. In this paper also will be found a number of excellent remarks on the pulse, and the advantages to be derived from a soothing and complying treatment. In his third, last, and most finished production, Dr. Armstrong acknowledges the obligations he was under to Dr. Pearson for some useful information regarding the cure of this disease. In this paper we find the treatment improved, and his success greater than is stated in his first publication. Of twenty-six cases, three only terminated fatally. In addition to opium, in the treatment of these cases, he employed the lancet, calomel, cold affusions, &c. In regard to pathology, the author furnishes us with a few brief remarks on the subject of congestion of the encephalic veins. These are, however, crude and unsatisfactory.

The "excellent work" of Dr. Sutton, entitled, *Tracts on Delirium Tremens, on Peritonitis, &c.*, as it is denominated by Dr. Armstrong, made its appearance in 1813. The treatment recommended by this author was the active and energetic use of opium almost exclusively. Of twenty-four cases, four terminated fatally.

Dr. Sutton writes as if he were utterly unconscious of the labors of Drs. Pearson, M'Whirter and Armstrong, all of whom bestow upon opium full as much praise as it deserves. That he might have been unacquainted with the writings of Pearson and Armstrong is possible. The tract of the former had but a limited circulation, and the essay of the

latter appeared in the *Edinburgh Medical and Surgical Journal*, but a few months before the publication of Dr. Sutton's work. But that he was ignorant of the cases of Dr. M'Whirter, which were before the public six years, and in a periodical of extensive circulation, is altogether improbable.

In 1815, the thesis of Dr. J. C. Snowden was published in the *Eclectic Repertory*. This paper, we are informed, was drawn up "without the knowledge of any previous essays on the subject." Such being the fact, it is highly creditable to the author; for he is indebted to the suggestions of his own mind for theoretical and practical views, that receive ample confirmation in the writings of all those to whom allusion has already been made.

From the pen of Dr. Wood, of Newcastle, a short paper was published in the *Edinburgh Medical and Surgical Journal*, for the year 1817. The conspicuous attribute of this production consists in the decided preference which it gives to the application of cold water to the head over the narcotic treatment. "I have known," it is remarked by Dr. Wood, "several deaths take place under the plan of treatment by laudanum and wine, and I have not known one death under the cooling plan."

In the *Eclectic Repertory*, for the year 1817, the very excellent essay of Dr. Joseph Klapp made its appearance. In this production, an entirely new view of the disease is taken by its author. By him, *delirium tremens* is radicated in the stomach, which hypothesis is ingeniously proposed and ably defended. In accordance with this opinion, opium is discarded, and emetics eulogized as an excellent succedaneum. In illustration of this novel plan of treatment, a number of judiciously selected cases are adduced. Another paper from the same author is published in the *American Medical Recorder*, for the year 1818. In this, additional cases and arguments are produced in support of his peculiar pathology and practice.

In the *Philadelphia Journal of the Medical and Physical Sciences*, for the year 1820, there is a paper which purports to be a review of the *Inaugural Essay* of Dr. Snowden, but which, we understand, contains an epitome of Professor Chapman's practical opinions. This distinguished physician insists, with great propriety, upon the advantage of evacuations *sursum ac deorsum*, as a step preliminary to the employment of opium and brandy.

In 1821, an essay was published by Dr. James M. Staughton, in the *Philadelphia Journal of the Medical and Physical Sciences*. The pathology and treatment of Dr. Klapp are adopted, and defended with earnestness and talent.

In the edition of Dr. Armstrong's work on *Typhus Fever*, by Professor Potter, the able annotator has furnished a number of important practical remarks. These are in reference to the lancet particularly, which he has used with an intrepidity that would startle the imagination of those who have imbibed the views, and pursued the practice of Pearson, Sutton, &c.

In the American Medical Recorder for the year 1822, is to be found a paper written by Dr. Stephen Brown, from which it appears that the sentiments of Dr. Armstrong, as exhibited in his last publication, are very generally embraced. His partiality, however, for calomel is condemned.

In an essay written by Dr. Blake, and published in the Edinburgh Medical and Surgical Journal for 1823, delirium tremens is for the first time divided into three different and distinct stages. This author has not suffered his imagination to be dazzled by the preposterous belief, that all the diversified forms of this disease can be relieved by any individual remedy, however powerful and efficient. His treatment is regulated by the manifestations of the disease, and not by preconceived opinions.

In 1825, some observations were published by Mr. Howship, in his treatise entitled, *Practical Remarks upon Indigestion*, &c. These are valuable, chiefly on account of the dissections. When the encephalon was exposed, the large veins of the pia-mater were distended with a pale, watery blood.

In 1827, the elaborate essay of Dr. Coates appeared in the North American Medical and Surgical Journal. The result of this author's observation and research is, that opium is the only remedy on which reliance should be placed. As we shall be under the necessity of considering in detail numerous points embraced in this publication, we shall, to avoid repetition, abstain from additional comments at present.

In the American Medical Recorder, for 1828, an anonymous writer alludes to two cases in which quiet sleep for several hours procured no alleviation of the symptoms. They both terminated fatally.

In the same periodical, for the same year, we find a letter from the pen of Dr. Hereford. This physician, from long and varied experience and uncommon success, recommends wine and ardent spirits in the treatment of delirium tremens, and proscribes opium, from having witnessed "its unhappy effects on many constitutions."

Two cases of delirium tremens are recorded by Dr. Renton, in the Edinburgh Medical and Surgical Journal for 1828,

which were successfully treated by local blood-letting and purgatives, preliminary to the employment of opium.

Thus we have furnished the reader with an outline of the present state of our knowledge on the subject of delirium tremens. The design of this sketch was not to give a full statement of the opinions and practice of all the authors that have treated of this disease. This was in its nature absolutely impossible; for there are many on the continent of Europe wholly inaccessible to us, except through the analytical labors of journalists. Nor indeed is a knowledge of what they have all done for the advancement of medical science, to be obtained through this channel; many of them are known to us only by name. As it was necessary, therefore, for this sketch to be imperfect, we determined to exclude from particular notice all those whose writings we have not had an opportunity of seeing. While this is to be regretted, we are not aware that a sufficiently full account has not been given, to embrace all the conspicuous innovations that have been introduced, either theoretical or practical, with the exception of the novel opinions of Dr. Joseph Frank. This able physician contends, that delirium tremens consists in inflammation of the brain, and his treatment is exclusively antiphlogistic, which he declares has been uncommonly successful.

Name.—Thirty years have not yet elapsed since delirium tremens originally attracted particular attention; we should not, therefore, be surprised that it has been described under a multiplicity of essentially different denominations. So diversified, moreover, are the phases under which it is exhibited, that we should indeed have been surprised, had this not have absolutely happened. No nomenclature can rest upon a basis positively immovable, until the seat and nature of disease is fully understood. That this is the case with delirium tremens will not be contended. Our ignorance upon this subject is a source of universal complaint among practitioners.

By Dr. Pearson the disease under consideration was emphatically denominated *brain fever*. This term was adopted by Drs. McWhirter and Armstrong. "When we consider," it is justly remarked by Dr. Coates, "the extreme laxity and vagueness of this term, as well as the circumstance, in particular, that the same appellation is frequently given to phrenitis, a totally different disease, from which it is of the first importance to distinguish the affection under consideration, but little probability appears that any one will decide in favor of its adoption."

The term *delirium tremens* was originally applied by Dr. Saunders, and it has since been adopted by numerous authors,

among whom may be mentioned Drs. Sutton, Burrows, Howship, Brown, Coates, and Barkhausen. Though this term has received the approbation of a number of the members of the profession, it is not entirely unobjectionable. It is apt to induce the impression that delirium is something more than a symptom, in opposition to the most satisfactory evidence that it is not. Delirium is rarely, if ever, present at the very onset of the disease, and, in one instance at least, it was entirely absent. Thus, it is asserted by Dr. Staughton, that tremor generally precedes "the attack of derangement." To the same effect the testimony of Drs. Armstrong, Snowden, and Peace, might be adduced. A fuller consideration of this subject, however, will be necessary in a subsequent part of this essay.

In support of the position that this disease may occur, and delirium be altogether absent, a case recorded by Dr. M'Whirter may be adduced as legitimate proof. The instance alluded to, is called by the author *palsy*, but all its conspicuous features denote the existence of that state of the system which commonly succeeds the habitual use of ardent spirits. "He (the patient alluded to) was middle-aged, immensely corpulent, had drank two bottles a day of brandy for a fortnight; upon leaving off at once, had become paralytic of his hands and feet." The narcotic treatment, energetically enforced, soon accomplished a radical cure.

It may be objected to this term, that tremor is not of uniform occurrence. Thus, it is remarked by Dr. Armstrong, that "three cases have occurred in my practice in which it was absent." To impart force to this objection, the testimony of Professor Sparenza, and of Drs. Coates and Peace, might be adduced.

The credit of introducing the phrase *mania à potu*, is due to Dr. Snowden. Though it was in familiar use at one time in Philadelphia, I know of no author but Dr. Staughton, by whom it has been adopted. The delirium in this disease and mania, are manifestly unlike; to adopt this term, therefore, is decidedly incorrect. *Mania à temulentia*, a term derived by Dr. Klapp from Sauvages, is obnoxious to the same objection. Nor is the *febris temulentia* of Professor Potter entitled to more respect. Fever is far from being a symptom of universal occurrence in this disease. M. Broussais' *anomania* cannot be adopted, for the reason that we reject the terms used by Drs. Snowden and Klapp. It moreover refers this disease too exclusively to a particular cause, which is applicable with equal force to the *delirium ebriositatis*, used by Dr. Blake. The fact, which may be established by manifold, diversified and

concurrent evidence, that inflammation of the brain is of comparatively rare occurrence in the disease under consideration, is proof positive that the term *encephalitis tremefaciens*, introduced by Professor Frank, and adopted by Professor Sparenza, will never become popular with nosologists.

In Germany and France, in England and Ireland, but particularly in the United States, the phrase *delirium tremens*, although highly objectionable, has received almost universal adoption. Public opinion has sanctioned it; we shall, therefore, though with some hesitation, adopt it.

Etiology.—Universal consent, deduced from the most ample and diversified experience, has abundantly established the fact, that of all the causes which are occasionally instrumental in the production of delirium tremens, the habitual and intemperate use of ardent spirits is infinitely the most prolific.

Opium has also produced this deleterious effect. We are informed by Dr. Armstrong, that he attended a female, who had long been in the habit of taking opium to a very great extent, and who was attacked with this disorder, on suddenly lessening the doses of her favorite drug. It is also remarked by Dr. Coates, that he has seen strongly “characterized cases, in which it was produced by the intermission of the use of opium. Tradition,” he continues, “at the Pennsylvania hospital, also confirms this last observation.”

An instance of this disease, was seen in a lady, by Dr. Sutton, which resulted from habitually taking the tincture of lavender in large quantity.

It has been alleged, that wine is capable of acting as a remote cause of this disease; but Dr. Barkhausen is of opinion, that this effect is rarely, if ever, produced, until it has lost in a great measure, the power of producing sufficient stimulation, when it is exchanged for distilled spirits. This author has seen mild cases of delirium tremens result from the use of strong beer. Dr. Ayre, who has had an extensive practice in this disease, has seen it arise “from several other causes than intemperance in drink,” though this was most frequently the productive agent. “He has seen it result from the emanations of lead—from starvation—and from some other sedative causes.”

A case proceeding from a most singular cause, is recorded by Dr. M’Whirter. “A middle-aged man, who, with many others, had been universally scorched by the firing of a coal-mine,”—“and who had been treated according to Dr. Kentish’s method, for eight or ten days, with apparent success, in so much that a great part of the skin had been reproduced, became suddenly delirious. He labored, in fact, under genuine delirium

tremens, and was effectually relieved by the energetic employment of the narcotic treatment."

It appears that this disease may proceed from wounds, fractures, &c. The *delirium traumaticum* of M. Dupuytren, does not appear to be essentially unlike *delirium tremens* in its characteristic features. This is the opinion of Dr. James Johnson. Their identity is maintained by Dr. Stewart, who, although an English physician, has, we are informed, seen this disease on a large scale, in the United States.

This disease may result from metastasis. Thus, Dr. Gregory, in his Theory and Practice of Physic, asserts, that he once saw "a distinct affection of the brain, by metastasis of acute rheumatism, assuming the very remarkable character of *delirium tremens*."

Is a protracted course of immoderate drinking always essential to the production of this disease? This is the general impression. From the force of testimony, however, as well as from personal observation, we are constrained to reply in the negative. Thus, in the 13th vol. of the American Medical Recorder, two cases are alluded to, the subjects of which were what is usually denominated "tipplers, and not drunkards." From Dr. Barkhausen, we learn, that he has seen delirium tremens in individuals, who "but seldom, or perhaps never, became intoxicated."

In our deductions, however, upon this subject, we should not be exclusively governed by the quantity of liquor daily consumed, or the length of time the individual has indulged in the deteriorating practice of drinking. The natural strength and irritability of the constitution will always exercise great influence in modifying the result. Thus, when there is but little constitutional strength, and considerable nervous irritability, ardent spirits will produce much higher excitement, than where the circumstances of the individual are directly the reverse. If this be true, the legitimate conclusion is, that delirium tremens will be developed with the least promptitude, in the constitution which most reluctantly comes under the influence of unnatural or spirituous stimulation.

Before Delirium Tremens can be produced, is it necessary, that the use of ardent spirits should be suspended? This is a popular, but I am persuaded, a gratuitous opinion. In a majority of instances, it is unquestionably true, but that it is universally so, we positively and unhesitatingly deny. Delirium tremens, it is remarked by Dr. Coates, "occurs in every case, so far as known, as a consequence of the sudden suspension of the use, more or less habitual, of a narcotic, or narcotico-

stimulant substance." By Dr. Lind the reverse of this is maintained, and by Dr. Barkhausen it is asserted, that habitual drinking is usually sufficient, without the interposition of any exciting cause, to produce delirium tremens.

In the essay of Dr. Coates, there is a case directly opposed to the opinion which he defends. "Michael Leidey, about forty years of age, was committed to prison on the 30th of April. Was much intoxicated, and had been so almost constantly for the last six months. The next day he had a convulsion fit,"—"and discovered symptoms of mania," notwithstanding he had received from the keepers a gill of spirits. In the case of Dr. Flagler, recorded in the 2d vol. of the American Medical Recorder, no mention is made, up to the manifestation of our equivocal symptoms of *delirium tremens complicated with bilious fever*, of the cessation of the patient's intemperate habits, while we are left to infer, that he drank half a pint of gin regularly every night, until he was visited by his physician. No allusion is made to the quantity of spirits consumed during the day, which doubtless was considerable. A case is recorded by Dr. Mathey of Geneva, in his *Recherches sur les Maladies de l'Esprit*, &c., of an individual, who only ceased excessive drinking while asleep, and yet delirium tremens was developed in him.

General character of Delirium Tremens.—Much to the prejudice of sound pathology and philosophic practice, this disease has been almost uniformly considered an affection that presents itself, characterized invariably by the same conspicuous features. That this is an error of enormous magnitude, and must have been extensively deleterious in its practical results, is fully illustrated by the great discrepancy of opinion existing among authors, not only in regard to its seat and nature, but also on the subject of its treatment. Thus, while a considerable number of highly respectable physicians consider the energetic enforcement of the opium practice the great palladium of the patient's safety, there are those, who are fully as much entitled to our confidence, who condemn this course, as unauthorized by the nature of the disease, as wholly unwarranted by the success obtained; and who contend, that the active employment of anti-phlogistic measures, is the only anchor of well-grounded hope. Is this not conclusive evidence, that delirium tremens cannot invariably have presented itself under the same form, to physicians equally respectable, who hold opinions of its nature, and pursue modes of treatment, so perfectly contradictory. To us, it has been satisfactorily demonstrated, both by personal experience and from research, that the opposing sentiments of the

authorities just alluded to, are to a certain extent founded in truth.

To correct, as far as possible, the evils into which such partial views must necessarily lead, is one of the chief objects of this essay. To accomplish this object, it is necessary, in the first place, that we should give a general description of delirium tremens; and afterwards, minutely notice the symptoms characteristic of the different forms under which it most commonly occurs.

In at least eight tenths of the cases of this disease, it will be found to make its onset during that state of depression, which invariably supervenes upon the sudden relinquishment of the protracted and immoderate use of ardent spirits. Among the first evidences of the approach of delirium tremens, may be mentioned as the most general, a universal *malaise*, lassitude, coldness of the hands and feet, indistinct *horripilatio*, sometimes almost imperceptible, and uniformly imperfect. There is frequently a considerable reduction, and sometimes a marked augmentation of heat of skin. The body generally, but particularly the face, is bedewed with an abundant and disagreeable cold, clammy perspiration. Sometimes the skin is hot and dry, and it frequently happens, that when perspiring, the fluid exhaled is comfortably warm. The pulse for the most part is remarkable for its slowness and feebleness; not yielding, in some cases, more than sixty-five beats in the minute. In some of the forms of this disease, it presents a character altogether different. Sometimes we find the pulse remarkably small, thready, quick, and so frequent, as to give more than 120 pulsations in the minute; sometimes gaseous, full, round, voluminous, but compressible; sometimes tense, resisting, and with difficulty compressed. The appetite is always impaired, frequently annihilated, and the patient generally experiences an insurmountable loathing for animal food. The tongue is usually moist, though sometimes dry. It presents numerous morbid appearances, and is sometimes perfectly clean. There is in some cases white fur, sometimes a sticky, glutinous slime, frequently white, and often of a yellow bilious hue. There is generally nausea, frequently vomiting, though in some cases the stomach is perfectly tranquil throughout the disease. Oppression and precordial anxiety are rarely ever absent. Frequently there is epigastric tumefaction and heat. There is sometimes an exception, but in a majority of instances, the head suffers from pain. This exists from simple headach to the most intense and insufferable torture. The spirits are generally gloomy and depressed, though sometimes in a high state of exhilaration. The

expression of countenance is usually dejected and melancholy, though sometimes haughty, fierce and daring. Pervigilium commonly exists from the inception, and obstinately persists, until the disease is subsiding. If the patient should sleep, his naps are short, unrefreshing, and frequently interrupted by alarming and frightful dreams. The hands generally tremble; often the tongue, and sometimes the muscles of the extremities, are spasmodically affected. There are cases, however, in which there is no tremor; the hands exhibiting astonishing normal steadiness. The bowels are almost uniformly in an obstinate state of constipation. In some rare instances, they are found in a state of coliquative solubility.

The length of time during which the system labors under the symptoms just enumerated, before delirium is developed, is various, and cannot be determined with much precision. It depends upon a number of collateral circumstances, hereafter to be particularly mentioned. Generally, however, they will be found to exist from twenty-four to forty-eight hours, although its development will take place earlier in a number of instances.

The form when it is revealed is peculiar, and so far characteristic, as to be seldom developed in any other abnormal state of the system. Its conspicuous attribute consists in a belief of the existence of frightful objects, in positions in which, as Dr. Pearson has well remarked, it is physically impossible for them to be situated. The patient fancies that Satan is attached to the ceiling, and as his disease increases in intensity, his Majesty appears to hover over him, and he will shrink as if there were reality in the impending danger. If he is a soldier, and has ever been in battle, the contortions of his body show that he is attempting to avoid the thrust of bayonets, that are on the point of being plunged into his vitals. His apartment is frequently crowded with his imaginary intruders. He is constantly pursued by an enemy, whose machinations it is his exclusive study to defeat or to elude. He is in great dread of assassination. The co-operation of his attendants is frequently solicited to assist him in defending himself against his enemies, who wish to shoot or poison him, or to drive from his presence disgusting objects, that annoy him exceedingly, such as snakes, lice, rats, frogs, and vermin of every description, with which he imagines the floor of his chamber or his bed to be covered. Sometimes snakes are in his bed, attacking him at all points, which, from his deportment, seem to inflict real pain. It often happens that his apartment is so crowded with visitors, who are so zealous and indefatigable in their attendance upon him, that he complains of their keeping him from his regular hour of repose;

sometimes they disturb him by repairing or altering the house ; sometimes they severely castigate him with the lash ; they pull off the bed clothes, dance, box, and go through various gymnastic exercises.

His loquacity is unintermitting ; he holds colloquial intercourse with ideal personages. Imaginary sounds distress him exceedingly.

A soldier cannot be persuaded that he is not arraigned for the commission of some crime, which is to subject him to the penalties of the military code, and his mind is altogether engrossed in preparing his defence. If religion has ever been a subject of deep and engrossing reflection, he supplicates for mercy. If he is subjected to personal restraint, the dilapidating condition of his pecuniary affairs imperiously demand his immediate attention. His confinement he is apt to suppose illegal, and designed to answer some individual or selfish purpose. Often, under the pressure of urgent business, he imagines he has walked or rode several miles, when he has not left his chamber. Under the impression that the house is about falling, and will crush him to death, he is exhausted in attempting to support its sinking walls. He is rarely satisfied with the situation of the furniture, particularly with that of his bed, which he will leave, if not prevented.

Solitude is frequently a state of dreadful agony. He entreats and conjures most pathetically not to be left alone, exposed to the unrelenting cruelty of the demons and evil spirits by which his room is crowded, and who only wait until he is unprotected to accomplish his extermination. No excuse, no apology, is sufficient to persuade him to suffer his attendants to retire. No reasoning or assurances can convince him that his apprehensions are unfounded.

Under this morbid excitement, he conceives plans, which it is perfectly impossible to execute ; and often he is intent upon the execution of plans previously formed. Sometimes it has been observed, that individuals laboring under this species of delirium, have given proofs of a much richer, more exuberant and brilliant imagination, than when the intellectual faculties were in a state of perfect equilibrium. Occasionally they discover a grandeur of conception, pregnancy of fancy, and an eccentricity of thought, that fill the mind, inclined to the elegant pursuits of philosophy and literature, with unlooked-for pleasure.

To divert the mind from the subject of its delirious wandering, is frequently absolutely impracticable, and attempts to accomplish it often result in an aggravation of the symptoms.

Injudicious opposition is apt to transport them with rage. Those that do not possess full belief in their absurdities, are treated with ineffable contempt. Deportment of a soothing and conciliating character may sometimes succeed in securing their confidence, but advantage should not be taken of the treacherous calm which results from it, to propound numerous or impertinent questions. This is almost certain to occasion confusion of thought, and aggravation of the delirium. It is a matter of astonishment to observe with what precision the expression of countenance corresponds with the emotions which disturb the mind, and the ideas that float wildly through the desolated mansion of thought.

Frequently patients display achievements of astonishing corporeal vigor, but it is generally of short duration, and is invariably succeeded by an almost overwhelming muscular feebleness.

It has been asserted, that this delirium always relates to, and is exclusively engrossed with the patient's private affairs. This is doubtless very commonly the case; but when it is asserted to be universal, we dissent, from a conviction that it is unsustained by experience. It sometimes happens that he cannot be convinced he is in his own house; and the calamity which he dreads is not always personal. The misfortunes of his friends constitute, on some occasions, the ground of his complaints.

At night, or if the apartment of the patient should be darkened, this delirium will certainly be exacerbated.

The symptoms above enumerated, may continue as long as ten days, but at the expiration of that time, convalescence must be established, or they will assume a character decidedly adynamic. Either of these events may, however, and actually do, in a majority of cases, supervene sooner, but ten days is the period beyond which a patient cannot labor under delirium tremens, except the symptoms be adynamic.

When, therefore, the disease has not been completely subjugated within the time designated, the following symptoms will be found to exist. Perspiration now issues almost in a stream, from every pore of the skin; the whole body trembles, and the hands in particular are almost paralytic. The pulse is now smaller, more tremulous, thready, and so exceedingly rapid, that in some cases, it is impossible to count it. The tremor of the hands, and subsultus tendinum, may, however, deceive us in regard to the strength of the heart. Under these circumstances, there is some difficulty in feeling the pulse, and if we are not careful, we may believe it to be so frequent as not to be numbered, and so feeble as to be almost imperceptible, when in fact,

if the patient should become tranquil, as sometimes happens, we may find it not very frequent, nor very feeble. The tongue is dry, occasionally cracked, and encrusted; the countenance is suffused, and its expression anxious; the pupils are contracted; if he is able, the patient picks at the bed clothes; his delirium is now low, and muttering; the urine and excrement are passed unconsciously. Sometimes he becomes insensible, and expires in a comatose, or apoplectic state.

Classification of Delirium Tremens.—There are no less than four separate and distinct varieties of delirium tremens, which it is of the utmost importance the physician should closely study, and thoroughly understand, or he will never be able to treat them with satisfactory success. That they are deduced from sound and unimpeachable data, will be abundantly demonstrated in the subsequent pages. The epithets which we have selected to designate and express the several varieties of this disease are, *sthenic*, *hypersthenic*, *asthenic*, and *bilious*. The word *sthenia* was employed by Brown, to designate that state of the system which disposes to inflammatory diseases. As our first variety consists in vascular irritation, a condition which doubtless predisposes to, and frequently terminates in, inflammation, the epithet *sthenic* may be, with peculiar propriety, employed to designate it. Thus, the first variety is denominated *sthenic delirium tremens*. The term *hypersthenia* has been used to denote an excess of energy in the action constituting the disease. As the second variety consists in inflammation, we have adopted it. Thus the second is denominated *hypersthenic delirium tremens*. The epithet *asthenia* has been employed to denote debility, and as the third variety consists in nervous irritation, we have determined to use it. Thus, we have called the third, *asthenic delirium tremens*. The fourth and last variety consists in the supervention of *delirium tremens* upon *bilious fever*, and as the symptoms here are more decidedly bilious than in any other of the varieties, we have denominated it *bilious delirium tremens*.

More appropriate terms might probably have been employed, but as their meaning is abundantly plain, and as the objects the author wishes to accomplish are chiefly of a practical character, they are sufficient to answer his purpose.

Having given a full account of the symptoms of this disease in our general description, we shall abstain as much as possible, in our notice of those belonging to the several varieties, from the enumeration of any but such as are conspicuous, and appear to be characteristic. Nor do we esteem it necessary to give a particular account of the adynamic symptoms of their several

varieties, as they so closely resemble those given in the general description, as to render this altogether supererogatory.

Sthenic Delirium Tremens.—The constitution is never much impaired in those attacked by this variety. The subjects of it are generally robust, and but little advanced in years, or if they have passed the meridian of life, they have not been long in the habit of drinking intemperately. Appetite is not much impaired, nor are the powers of digestion materially injured. In this variety, the patient, almost from the onset of the disease, talks incessantly, incoherently, and boisterously. He betrays, in his disposition to quarrel, great irritability of temper. There is considerable determination of blood to the head. He complains of vertigo, tinnitus aurium, sharp, and sometimes a dull, heavy pain of the head. The face is flushed; the eyes are often injected; the head is hot, and the skin in general is hot and dry, though sometimes it is perspirable. The tongue is furred, and its edges red. There is nausea, and sometimes vomiting. There is epigastric heat, with precordial anxiety and oppression. The bowels are costive. Pervigilium is unintermitting. Tremor of the hands is not in general considerable; it is sometimes altogether absent, but it has been seen to pervade the body universally. The pulse is accelerated, full, and even hard, though frequently compressible.

This variety should never terminate fatally. Nature is often quite sufficient to subdue it. Judicious treatment will never fail to accomplish a complete restoration of health.

Hypersthenic Delirium Tremens.—The individuals attacked by this and the preceding variety, are of the same character identically. Here the patient becomes frantic very early in the disease. There is very great cerebral determination; the pain of the head is intense, and the temples throb; the eyes are injected, and intolerant of vivid light; the pupils are sometimes contracted; the face is very red, and the features swelled; thirst is excessive; the tongue is generally covered with a white, and sometimes with a dark brown fur; it is tremulous, and its edges are deeply red; the breath is offensive; the body is generally very hot, while the feet are cold. There is rarely much, if any, perspiration. It sometimes, however, happens, and is even abundant and chilly. The epigastrium is intensely hot, and even painful, when forcibly compressed. The pulse is frequent, firm and full. Tremor is very aggravated, and pervigilium is constant. The bowels are costive, and the urine clear and limpid.

Convulsions are more common in this variety of delirium tremens than in any other. It is not uncommon, without the

occurrence of any introductory symptoms, for the patient to become insensible, and immediately afterwards convulsed. He foams at the mouth; respiration is often stertorous, and the paroxysm terminates in stupor.

This variety of delirium tremens is completely under the control of the physician. The establishment of convalescence is always preceded by a normal sleep of not less than six hours. Less than this is rarely productive of much benefit. We say a *normal sleep*, which we wish clearly to be contradistinguished from a *disturbed and unquiet sleep*, usually the result of the operation of powerful narcotics. Death may, and has, succeeded to a sleep of this kind. Before the abnormal vigor of the vascular system has been sufficiently subdued, the brain may be readily forced into an apoplectic state, by the injudicious employment of narcotics.

While there is still in existence much inflammatory excitement, death may supervene upon convulsions, to which frequently succeeds an incurable state of apoplexy. This we have too often to ascribe to the premature use of opium. An inefficient and pusillanimous treatment may succeed in preventing an immediate termination of the disease in death, but it will never be able to subdue it. When this has been the case, the disease assumes a more protracted character, and either runs into the asthenic variety, or terminates in permanent alienation of mind, and this not uncommonly in apoplexy. Asthenic delirium tremens may also be superinduced by a too energetic enforcement of the antiphlogistic treatment. This is certainly an undesirable termination, and to guard the practitioner against it, will be the special object of our attention, when we take into consideration the mode of cure.

Asthenic Delirium Tremens.—This variety uniformly occurs in the shattered constitution of the drunkard, exhausted by protracted and excessive indulgence in the use of ardent spirits. The appetite is annihilated; the digestive and nutritive powers are almost paralyzed; the face is bloated, and the countenance of a tallow complexion. The first evidence of the approximation of this variety is a peculiar and striking mental depression, and indefinable solicitude, accompanied by heavy, deep sighing, and watery eructations. He soon complains of oppression and anxiety at the precordia; there is always nausea, and very frequently vomiting; the tongue is loaded with a tenacious slime; he is often flatulent, *sursum ac deorsum*. The face is shrunk; the complexion pale, wan, and cadaverous; the heat of the head, as well as the body and extremities, is of a preternaturally cool temperature; perspiration is inordinately abun-

dant, and it imparts to the touch the cold and clammy sensation of approaching dissolution. The pulse is quick, feeble, thready, tremulous, and sometimes so frequent as to be with some difficulty counted. Insomnium is very early developed, and is obstinate and unintermitting. Tremor exists in a very aggravated form, and, besides the hands, it generally seizes upon the tongue. Delirium now sets in, but is not apparent so early as in the preceding varieties. In this variety, its spectral character is exhibited in the highest perfection. Although in some instances, there is manifest evidence of slight determination to the brain, there is, in a majority of cases, an almost total absence of those symptoms, that show the encephalon to be the centre of fluxion. The deportment of the patient is far less violent than in the sthenic and hypersthenic forms; nor does he talk so vociferously or incessantly. He is also much more easily soothed, and his confidence more promptly secured, by the conciliating and complying physician. It is a fact, which we state as the result of personal observation, that when the delirium is fairly established, gastric irritability is always very much moderated, and very frequently entirely extinguished.

The unaided exertions of nature are rarely, if ever, able to subdue this variety of delirium tremens. The decisive, prompt, and judicious administration of therapeutic agents is generally necessary. To recovery, a sound refreshing sleep of from six to twelve hours is a *sine qua non*. Sleep of this kind is a sure indication of established convalescence. When delirium tremens is originally asthenic, death is never the result of apoplexy. This fatal condition of the brain may, and does sometimes occur, when the asthenic has supervened upon the hypersthenic variety of delirium tremens. When death is the termination, it seems to be almost exclusively the result of indomitable per-vigilium, and the corporeal exhaustion unavoidably consequential.

Bilious Delirium Tremens.—This is more properly a complication than a simple variety of delirium tremens. It occurs, however, so frequently in miasmatic districts, and imparts to bilious fever a form so mysterious, as to be in a great degree unintelligible to many physicians, that we consider ourselves warranted in ranking it among the varieties of this disease, that we may have an opportunity to exhibit its character, and point out the mode which we have found most successful in its treatment. My experience is comparatively limited, but I have never seen bilious fever attack a confirmed drunkard, but what this complication was exhibited to a greater or less extent. Its frequency, therefore, will authorize the notice we shall take of

it, while its malignancy renders it a duty imperiously binding upon us. This variety is exhibited in habits similar to those in which asthenic delirium tremens is developed.

Those attacked with this variety are not violently seized in the inception of the disease. For two or three days before medical aid is summoned, the patient complains of general malaise, very restless nights, considerable thirst, nausea, and vomiting, of an aqueous or yellowish fluid. When we first see him, it is usually during or immediately after an imperfect chill, which is sometimes succeeded by slight febrile re-action. Sometimes also it happens that the skin continues cool and perspirable. When re-action does occur, it is always imperfect, irregular, and never considerable in intensity in any part except the epigastrium, which is usually hot. There is much oppression at the precordia, and the abdomen is somewhat distended. Appetite is much impaired, and sometimes annihilated. The tongue is loaded with a white, yellowish and brown fur; it is tremulous and rather too pointed; thirst is ardent. From the commencement, there is nausea and occasional vomiting, but soon the stomach becomes very irritable. The pulse is frequent, but not quick; it is full, soft, and sometimes tense. The bowels are constipated. There is headach, and occasionally the language of the patient is a little wild and unintelligible. The hands tremble.

When the irregular re-action subsides, the skin perspires freely. It happens, also, even during re-action, that, those parts of the skin that are hot will be dry, and those that are cool will be moist. During the twenty-four hours, there will generally be two complete remissions of febrile heat, after each of which the skin acts with energy.

The preceding symptoms will continue to increase progressively in intensity during the space of four or five days, unless they are moderated or subdued by proper treatment. If their force has not been broken, the most material aggravation will consist in the supervention of a frequent, quick, and feeble pulse; a more copious and general perspiration, and a very irritable stomach, and sometimes a too energetic action of the bowels. The re-action is now scarcely perceptible, while the skin is almost uniformly cold. Gastric irritability is a pretty sure forerunner of delirium. The former rarely exists as long as twenty-four hours before the latter is clearly revealed. As soon as delirium is firmly established, vomiting gradually declines, and ceases finally altogether. Cerebral determination is now manifest; the face is flushed; pain of the head is considerable, and the eyes are injected. Although there are occa-

sional naps, from which the patient awakes in alarm and unrefreshed, insomnium sets in synchronously, with delirium, and is unremitting. If the disease is not subdued or moderated, delirium is not in existence more than two days, rarely so long, before all the symptoms are decidedly adynamic.

When this disease does not terminate in health, it is always, as far as my observation extends, in death. It is usually preceded by convulsions and coma.

Critical examination of the description of Delirium Tremens, furnished by Dr. Coates.—The praise which has been bestowed upon the essay of Dr. Coates, on Delirium Tremens, by Journalists, has made it extensively known to the profession. For this reason, as well as for its intrinsic excellence, it has become, in a great degree, a standard production among practitioners. Such being the fact, it is a matter of the utmost importance, that the opinions and practical principles should be closely analyzed, in order to determine with precision how far this public expression of approbation is warranted by its real merits. With regard to the author of this essay, this is not only indispensable, but absolutely unavoidable. It unfortunately happens, that his views and those of that very respectable physician wage against each other a war of mutual extermination. Manifest contrast between the description of delirium tremens in the preceding pages, and that of Dr. Coates, cannot escape the attention of the intelligent reader. Both may be unfaithful, but it is perfectly impossible for both to be correct. That Dr. Coates has not fairly represented the disease he professed to describe, we shall now attempt, and we are persuaded we shall fully succeed in satisfactorily demonstrating.

Thus, Dr. Coates remarks, that pain "has never been observed by me in delirium tremens, either in the head, or in any other part of the body." This declaration does not correspond with the experience of authors generally. By Dr. Snowden we are informed, that "the patient complains of pain in every part of his head." Dr. Barkhausen says, that in the sthenic form there is "pain of the head;" "a feeling of uneasiness at the precordia;" and in the asthenic form there is "a feeling of great uneasiness at the precordia." Dr. Sutton says, there is "pain in the head;" and in his 16th case, he says, the patient "complained of violent shooting pains." Dr. Brown says, there is sometimes "pain or uneasiness of the head;" and Dr. Chapman says, the patient complains of "violent headach." In a case of Dr. Klapp, "the pain in the head was constant, and unusually severe." In the case of Oat Davis, recorded by Dr.

Peace, there was "determination of blood to the head, producing pain." In the case of Deutz, by the same author, there was "determination of blood to the head, productive of great pain." In the case of Mr. Allen, there was "pain in the epigastric and umbilical regions;" and in the case of Mr. Kenton, "the pupils were contracted, and impatient of vivid light," indicating, of necessity, pain in the head.

With regard to temperature, Dr. Coates remarks: "*Increased heat*, like pain, has never occurred in the cases under my observation, unless where it already existed, as the product of a previously existing malady." But little, if any, corroborative evidence in support of this statement is to be found upon record. By Dr. Sutton it is said, "The heat of the skin varies much, but is seldom intense;" by Dr. Blake it is said, there is a reduction of temperature in the first stage of the disease, but that in the second "the heat of the surface increases," and every part, with the exception of the hands and feet, become "hot and dry." By Dr. Barkhausen it is said, that in the first stage of the sthenic form, the face "is usually red, the head hot;" and in the third stage also, "the redness of the face, and heat of the head remain." By Dr. Armstrong it is said, "as the complaint advances, the skin becomes hot and dry." By Drs. Pearson and Brown, the same declaration is made; and by Peace we are told, the "head is preternaturally hot."

On the subject of the pulse, the experience of Dr. Coates is in a high degree singular, and unsupported by the testimony of those who have written on this disease. "The *pulse*," he remarks, "another indication of so much importance in the cognizance of inflammatory complaints, is, according to my observations, generally weak." That this is the case in particular stages of every variety, and in every stage of asthenic delirium tremens, we readily admit; but when the declaration is made to embrace all the stages and varieties, we utterly deny it to be a fair deduction from legitimate observation. Thus, in a case of Dr. Klapp, the pulse was "firm, and 72 a minute;" and in the case of Dr. Vancrede, "strong and laboring." By Dr. Staughton we are told, that the pulse is "full, soft, and gaseous;" by Dr. Chapman, "strong, full, though readily compressible;" by Dr. Peace, "full, compressible, and somewhat accelerated;" and by Dr. Barkhausen, in the sthenic form, it is "commonly quick, full, and even hard."

The impartial reader will readily discover in the preceding examination, that the mind of Dr. Coates labors under a strong hypothetical bias, which is particularly prejudicial to the true

interests of medical science. He betrays a manifest, and, I think, reprehensible unwillingness to admit, as attributes of delirium tremens, any of those symptoms that denote the existence of sthenic or hypersthenic action.

Another class of symptoms now invites our particular consideration. We allude to those that emanate from disturbance of the digestive viscera. Quite as unwilling to admit the existence of such symptoms as portray derangement of the stomach and collatitious organs, as he is those that we have just had under review, Dr. Coates appears determined to exterminate the idea, so ingeniously started, and ably defended, by Dr. Klapp. In this, however, there is an obstacle to be encountered, that is absolutely insuperable. Unfortunately for the author whose views we impugn, conclusions are to be deduced from data that come directly under our observation, and the existence of which no sophistry can persuade us to doubt.

On the subject of the tongue, which clearly points to the digestive organs as the source of any morbid appearances which it may exhibit, it is admitted by Dr. Coates, that "Dr. Brown, of the New-York Almshouse, mentions a foul appearance of the tongue as of frequent occurrence." He also informs us, that the "practice of the Philadelphia Almshouse has been adduced in proof of this fact," yet he has "not been able to discover any of these stomachic symptoms, except where they were fairly referable to the previous existence of another malady." That the experience of this author, on this point, is strikingly unlike that of other physicians, we shall first attempt to prove, and afterwards to demonstrate the invalidity of the cause to which they are ascribed by him.

The reader must not be seduced into the belief that the observations made in the Almshouses just alluded to, circumscribe the whole amount of testimony that may be appealed to in opposition to the experience of Dr. Coates. Nor is it necessary to adduce the observations of Dr. Klapp, though they are numerous, faithful, and conclusive. Interested in the result, his testimony, upon legal grounds, might be objected to. Sources of information, over which this circumstance could not have exercised any control, shall be laid under contribution.

Thus, it is asserted by Dr. Sutton, that in the greater part of patients the tongue is "coated with a white fur;" by Dr. Armstrong, that certain gastric symptoms are followed by a "white, moist tongue;" by Dr. Barkhausen, that in the first stage of the sthenic form, it "is often coated;" in the second stage it "becomes more foul;" in the first stage of the sthenic form, there is "great foulness of the tongue;" in the third

stage, it "becomes more loaded;" by Dr. Staughton, that it is "covered with a white fur, and sometimes tinged with brown toward the root;" by Mr. Howship, that it is white, "or covered with a brown fur;" by Dr. Blake, that in the second stage it "becomes more furred;" and that in the third it is brown, and dry in the centre. In a case of Dr. Vancrede's, the tongue was furred; and in one of Mr. Perfect's, it was black. By Dr. Snowden we are told, that the tongue is "dry and hard;" by Dr. Armstrong, that it is parched; and by Dr. Peace, that he has seen it of a "bluish aspect, occasionally dry and cracked."

By Drs. Pearson, Armstrong, Sutton, Howship, Staughton, Peace, &c., it is asserted, that the appetite is very much impaired, or entirely annihilated. By Drs. Armstrong, Chapman, Pearson, Sutton, Staughton, Blake, Brown, and Hereford, it is said there is nausea, and very frequently great irritability of the stomach. By Drs. Barkhausen, Armstrong, Blake, Brown, and many others, there is great oppression, and precordial anxiety. On the subject of a pertinacious state of costiveness, there is almost a perfect unanimity of sentiment among authors. In a case of Mr. Perfect's, the breath was hot and offensive; the abdomen tense and hard; the skin yellow, and the tongue black. In another case, from the same author, there was loss of appetite, nausea, extreme debility of the stomach, and pain in the right hypochondrium. It is asserted by Mr. Copeland, that in the cases of this disease which he has had occasion to treat, "there was much epigastric tenderness, and the motions were very black and fetid."

The result of this investigation is, that either the description of delirium tremens, furnished by Dr. Coates, or that of all other authors, is radically erroneous, and fundamentally unfaithful. Between these jarring and conflicting parties, we appeal to the tribunal of the medical public, for a candid decision. This is the court in which all disputes of this kind are to be finally adjusted. We feel no other solicitude upon the subject, than that which arises from a wish that truth may triumph, and the cause of science be subserved.

But it appears, that all of these gastric symptoms are to be ascribed "*to the previous existence of another malady.*" This explanation is justly entitled to the enviable credit of an original conception. It is not only lifting the cover of the *arcantum imperii*, but really taking a sober and deliberate look under it. With all my partiality, however, for new opinions, which are designed to improve theoretical or practical medicine, I cannot

persuade myself that this will have that tendency. It appears to us a conjecture wild and unwarranted.

Thus, it is supposed by Dr. Coates, that the morbid state upon which delirium tremens supervenes "*might occasion*" the symptoms indicative of gastric irritation. But if they are not symptoms of delirium tremens, but of a previously existing malady, is it not surprising, that they were not before developed? Why were they not revealed when the disease was at its height, and not postponed until it was on the point of being extinguished? Upon what principle is it, that they were developed synchronously with the development of delirium tremens, if they are not attributes of it, but of another affection that has been virtually eradicated? This is certainly the import of the author's words, for he says, "*might occasion*," evidently alluding to something future, and not to what might have already occurred.

Dr. Coates also informs us, that the symptoms to which allusion has just been made, "were positively absent—had actually disappeared, in a great majority, if not in the whole, of the cases, before the delirious condition actually commenced; at least with the exception of a slight foulness of the tongue, an appearance which it is known to require time for its removal." As this state of the tongue is *un debris*, or last trace of a previous disease, the tongue should go on progressively improving in its appearance until it becomes perfectly healthy. But what is the fact? Does this absolutely obtain? Certainly not. This slight "foulness of the tongue," becomes, according to Dr. Barkhausen, a tongue "more loaded;" and, according to Dr. Blake, "a tongue brown and dry in the centre." Is it true, that all the gastric symptoms, with the exception of "slight foulness of tongue," have "actually disappeared" before the occurrence of delirium? Testimony is decidedly unfavorable to this assertion. It is a fact, which frequent experience has verified, that when disturbance of the intellectual faculties supervenes upon irritability of the stomach, the latter is considerably allayed, if not entirely removed. But when this is the case, the irritation is sympathetically transmitted to the brain. They stand then in the relation of cause and effect; this, however, does not uniformly occur. Vomiting, in some instances, has been excessive in the last and most forlorn stage of this disease. In regard to the other gastric symptoms, the most abundant proof may be appealed to in support of the fact, that they exist not only after the development of delirium, but throughout every stage of the disease. Is it necessary to demonstrate this, by alluding to particular authorities, with respect

to thirst, want of appetite, precordial oppression, epigastric heat and tenderness in many cases, and constipation of the bowels? Certainly not. The preceding pages contain evidence full and satisfactory on these points.

It is a fact, the truth of which cannot be questioned, that a morbid condition of the tongue stands conspicuous among the sure criteria by which we judge of the existence of gastric derangement. A manifest amelioration of its aspect is also the surest proof that a permanent and salutary impression has been made upon the disease. We cannot, therefore, admit that foulness of the tongue continues with such obstinate pertinacity as to survive all other symptoms. If it does not yield with the others, the disease is still unsubdued. It takes time, we all know, to remove foulness of the tongue, but the same is true of the disease from which it proceeds. They exist as cause and effect; they must yield, or continue together. But to favor the hypothesis of Dr. Coates, this symptom must not only exist synchronously with the open development of the gastric affection, but also survive it. There must be a foul tongue *ab ovo*, and a foul tongue *usque ad mala*.

Prognosis.—The circumstances which contribute to enable us to form an opinion of the probable result, are numerous and diversified. They should all be taken into consideration, or we may be disappointed in our expectations. Thus, if the constitution has not been radically injured by the excessive use of ardent spirits; if the patient has not passed the meridian of life; if he has not previously labored under a chronic affection of any of the important viscera, particularly of the liver; if the habit of drinking has not been induced by severe mental distress; if, in a word, he labors under the sthenic or hypersthenic variety, and is properly treated, there is but little reason to apprehend a fatal result. The existence of any of the circumstances just alluded to, though not necessarily denoting death, should put the physician on his guard, for they are decidedly inauspicious.

No physician should hazard an unqualified opinion, where the attention bestowed upon the patient by his attendants is immethodical, or under the unguided control of stubborn ignorance or conceited folly. In a disease where it is so important that the remedies should be administered with regularity, promptitude and precision, it is impossible to foresee the result, where this is not rigidly observed. Nor is the duty of a nurse limited to the mere administration of medicine. Much depends upon the proper regulation of the misdirected and violent exertions of the corporeal faculties, as well as of the capricious wan-

derings of the intellectual powers. To accomplish this, good sense, implicit obedience, fidelity, and an unshaken resolution, are indispensable attributes in a nurse.

Among the symptoms of evil omen, Dr. Saunders has mentioned profuse perspiration. In my limited experience, I have always found it to indicate the existence of a stubborn, though not necessarily fatal disease. By Dr. Sutton, whose opinion is doubtlessly entitled to respect, the declaration of Dr. Saunders is considered unauthorized. He remarks, that "many cases recover under the most profuse and continued perspirations," and even where they were "clammy, cold and offensive." All this may be true, and yet the disease may sometimes be rebellious and fatal. Recoveries have taken place under the most unfavorable circumstances. I have seen this symptom when the disease yielded, as well as when it proved fatal. Even during my pupillage, two cases occurred in the practice of my able preceptor, in illustration of this. In both cases, perspiration was excessively profuse. One died, but the other recovered. When delirium is perpetual, and becomes every day progressively more intense, there is substantial cause to be distrustful of the result. A very frequent pulse is doubtlessly unfavorable. The intensity of the disease will be found in a great degree to be in proportion to the number of beats which the pulse yields above one hundred. Experience testifies to the truth of the following remark of Dr. Blake. He says, the pulse, "when in its frequency, did not exceed 100 strokes in a minute, I looked on the patient as safe: on the contrary, when, from its rapidity and the tremor of the hand, it could scarcely be counted, I considered him in imminent danger." Perpetual watchfulness, excessive gastric irritability, the vomiting of a coffee-colored fluid, injection of the eyes, small contracted pupils, strabismus and subsultus tendinum, are indicative of great danger.

Before convalescence can be firmly established, a sound sleep of from six to twelve hours is indispensably necessary. It must be calm, tranquil and refreshing. He must awake unagitated, unalarmed, and his delirium must have entirely disappeared. When, however, his slumbers are short, disturbed, and accompanied by subsultus tendinum; when he starts up alarmed, and then sinks into a loud muttering delirium, the most disastrous consequences should be apprehended.

Diagnosis.—So striking and peculiar are the characteristic symptoms of delirium tremens, that to confound it with any other affection, must of necessity arise either from unblushing ignorance, or criminal inattention. Inexcusable however as an

error of this kind is, it has been committed. The author has seen those who were incapable of drawing the line of demarkation between this affection in its simple forms, and when complicated with bilious fever. Nor were they more successful in distinguishing this complication from simple bilious fever. Mistakes here are uniformly of a deleterious tendency. The treatment of no one of the varieties of delirium tremens can be adapted to the successful management of bilious fever, without sustaining a radical modification.

Until the commencement of the nineteenth century, this disease was confounded with mania. This is the more surprising, as the delirium of the maniac is seldom spectral; the insomnia is not so constant; tremor of the hands and tongue are not frequent symptoms; nor is the colliquative perspiration, a circumstance of such common occurrence in delirium tremens, a symptom of mania. Those that labor under this disease never have the "wild, glassy, furious eye of the maniac, but constantly, with inexpressible anxiety of countenance, converting almost every object into terror." To distinguish these two affections, too much dependence is placed by Dr. Sutton on the fact, which is doubtless of common occurrence, that the mental alienation in delirium tremens relates solely to the private affairs of the patient. Although of very general occurrence, experience does not authorize the assertion of its universality. On one occasion it was observed by the author, that the imagination wandered constantly through scenery and upon subjects with which the patient had no particular familiarity previous to his indisposition. In the *Ed. Med. & Surg. Journ.* vol. 15, allusion is made to a patient, who could not be persuaded that he was "in his own room at home." By Dr. Blake it is asserted, that this peculiarity is not invariably present. In refutation of the opinion of Dr. Sutton, we may remark, that it has been alleged, that there is no form of mental alienation more common than that in which the mind of the individual is altogether engrossed with his private affairs.

A diagnostic inference is deduced by Dr. Saunders, from the peculiar manner in which the hands are employed in delirium tremens. "He has often considered the motion of the hands in this state of the disease, as if the patient might, with imperfect vision, be searching for things, and occasionally rapidly catching or avoiding them; such, for instance, as if in search for rats or mice, being things which he partly wished to lay hold of, and partly to avoid." It is supposed by Dr. Blake, that mental derangement may be distinguished from delirium tremens by the fact, that in the former the symptoms are mani-

festly increased in violence as day begins to dawn, while in *delirium tremens* they are exacerbated at night, and experience a sort of remission in the day.

The spectral character of the *delirium* will generally be sufficient to distinguish this disease from *phrenitis*. If it should be confounded with the *hypersthenic* variety, the readiness with which the pulse becomes compressible in the latter will disclose its nature and distinguish it from the former.

Delirium tremens is distinguished from *typhus fever* by the body of those laboring under the former yielding no cadaverous effluvia, like what usually arises from the body of those attacked by the latter. In the former there are no purple spots or *petechiæ*, while the *delirium* is developed more suddenly, is more boisterous, impetuous and constant. The watching is more uninterrupted in *delirium tremens*, while the fever is less intense than in *typhus fever*. In the former, there is always greater exertion of corporeal energy, in the latter, there is an almost entire prostration of muscular power. The former is always sporadic, the latter generally endemic.

Bilious Delirium Tremens has been confounded, not only with bilious fever, but also with *asthenic delirium tremens*. Either of these errors should be deprecated. Their tendency is always of a deleterious character. Too frequently they will lead to modes of treatment that will produce irremediable injury before they are discovered. Induced by this consideration, we shall attempt to point out the means by which these three varieties of morbid action may be so readily distinguished as to render an erroneous diagnosis almost impossible.

In *bilious delirium tremens* the tongue is generally covered with a yellowish or brown fur, but in the *asthenic* variety it is a tenacious slime; in the former the face is flushed during reaction; in the latter it is pale and cadaverous. During four or five of the first days of the disease, the countenance expresses but little wildness and apprehension; in the latter it exists to great extent from the beginning. In the former there is irregular flushes of heat during reaction; in the latter it is uniformly cooler than natural. At the same time, the skin in the former may be in some places perspiring freely, while in others it is hot and dry; in the latter this never obtains. In the former the pulse is full and soft; in the latter it is feeble and tremulous. In the former there is generally considerable epigastric heat and sometimes there is tumefaction and pain of the left hypochondria; in the latter they rarely if ever occur, and where they do they are so inconsiderable as to be scarcely perceptible. In the former *delirium* is not so early developed as in the latter. In

the former there is less perspiration than in the latter ; and in the former the patient sinks more rapidly after the occurrence of delirium than in the latter.

Bilious delirium tremens may be distinguished from common bilious fever by the following circumstances. The attack, in the former is made less suddenly than in the latter, and the onset is less violent. In the former the chill is not so intense and protracted as in the latter. In the former reaction is always imperfect and irregular ; in the latter generally uniform and intense. In the former the tongue is tremulous and pointed ; this never occurs in the latter before the supervention of adynamic symptoms. In the former the pulse is full and soft ; in the latter it is full, tense, and often hard. In the former, when there is determination to the head, it may be more violent while it lasts, but it is not so constant as in the latter. In the former pervigilium is more uninterrupted than in the latter. In the latter delirium does not so soon occur, and when it does, it is never spectral. In bilious fever perspiration is not so profuse as in bilious delirium tremens, nor does trembling of the hand ever take place before the patient has become typhoid.

This attempt to distinguish asthenic delirium tremens, bilious delirium tremens, and bilious fever, is of necessity, imperfect. It, may, however, aid the young practitioner, and enable him to see his way more clearly than without any assistance. Future experience will produce additional observations, and perhaps, enable the author to render it more complete and worthy of the public. The inquiry will also be prosecuted by other physicians, we hope, and the results of their experience, we trust, given to the profession. It is a subject that merits the most profound consideration, a thorough knowledge of which will be the means of saving many lives. The case of Dr. Flagler, recorded in the *2nd vol. of the Am. Med. Recorder*, was manifestly bilious delirium tremens, but it was confounded with the asthenic variety. The case finally terminated happily, but it was under treatment an unnecessary length of time. The case of Dr. Gorrie, recorded in the *N. Y. Med. & Phys. Journ. vol. 1*, was of the same kind, and in which the same error was committed. This case terminated fatally. We have seen bilious delirium tremens confounded with bilious fever in no less than five instances, three of which were fatal, the other two recovered under the management of the author. The importance of studying closely, and thoroughly understanding the means of distinguishing the three varieties of abnormal action to which allusion has just been made, cannot need fuller illustration or more satisfactory proof.

Necroscopic Reports. The opportunities of the author have not been such as to furnish him with very ample means of forming an extensive personal acquaintance with the abnormal appearances presented by the different viscera in this disease. This, we are convinced, however, will prove, paradoxical as it may seem, rather advantageous than otherwise. Much as pathological anatomy has been cultivated, it has not yet been satisfactorily demonstrated, that those who have prosecuted with most zeal and industry researches in that science, have furnished sounder opinions of the seat and nature of disease, than those who have comparatively but little practical knowledge of such inquiries. There are several manifest disadvantages under which the investigators of the former must necessarily labor. They are rarely placed upon a theatre sufficiently large to enable them to accumulate so great a number of facts, illustrative of all the various forms under which a disease may be exhibited, as to authorize full confidence in the truth of the deductions which may be made. Instead, however, of adding their observations to the common stock, in order that they may constitute a part, at least, of the materials from which accurate conclusions may be drawn by a disinterested inquirer, they never fail to classify themselves, and to furnish the world with a new theory. The phenomena which the pathological anatomist may have observed, and the conclusions he has drawn, may, it is true, be confirmed by others. This, however, rarely happens. But, even should this occur, they are immediately deprived, in the estimation of every judicious and reflecting physician, of at least half their real merit. The fact, that they are the basis of an hypothesis, casts a shade of suspicion around them. Should it however occur, and it frequently does, that the pathologist discovers traces of disease in a tissue not before observed, how easy is it to multiply facts, which no one else has ever seen, and perhaps never will. Anomalous appearances which have no necessary connexion with the disease that produced death, are too frequently taken for those of common occurrence, and upon which the malady really depended. Often indeed, hypotheses are conceived before a single dissection is made. Where this is the case, it would really be surprising if it were not, in appearance, supported by evidence the most conclusive and irrefragable. Thus it is, that false facts are multiplied, and the profession annoyed with preposterous and untenable theories. But to suppose that the utmost fidelity prevails, the sphere of observation is not usually sufficient to canonize the inferences of any pathological anatomist.

The truth of the foregoing remarks being not only true, but

absolutely undeniable, it must be confessed, that the philosophical pathologist who makes himself acquainted with the *sepulchretum* of morbid anatomy, and selects from it such facts as appear to have been recorded for the permanent benefit of the science, and not to answer hypothetical purposes, and then, makes such deductions as are plainly legitimate, will do infinitely more towards the permanent advancement of theoretical and practical medicine, than the anatomist, however faithful, zealous and indefatigable, who draws his conclusions from the necessarily narrow sphere of his personal observations.

Prompted by these considerations, without wishing to detract in the least from the real merit of those that prosecute researches in pathological anatomy, or to discourage the study of that very useful department of medical science, we shall attempt, from the materials already accumulated, to furnish such a view of the disease under consideration, as they will warrant, support and defend.

Brain. The real nature of delirium tremens has prepared us to anticipate a great diversity of opinion among authors with regard to the appearances exhibited by the organs after death. Unity of sentiment would constitute an incontrovertible argument against the opinion we entertain of its nature. There is no organ respecting which opinion is more divided, than that of the encephalon.

In two cases that were dissected by Dr. Armstrong, he found partial congestion of the brain. Dr. Shirlitz discovered, in a patient that died in apoplectic convulsions, the dura-mater in a state of inflammation, the vessels of the encephalon congested, and six ounces of clear fluid in the lateral ventricles. Permission could not be obtained to extend the examination into the other cavities. An account of the examination of one case is contained in the papers of Dr. Blake. No evidence of the existence of recent inflammation could be detected in the brain. With the exception of a small quantity of coagulable lymph effused between the tunica arachnoidea and the dura-mater, that organ appeared to be sound. Serum was effused in all the ventricles, but particularly the two lateral. In a case dissected by Dr. Hunt, "there were marks of inflammation in the brain, as coagulable lymph and serous effusion." The brain, according to Prof. Chapman, exhibits very conspicuous manifestations of disease. He has seen it much inflamed or congested, sometimes serous effusions and sanguineous extravasations. By Dr. Staughton, this organ was found entirely destitute of inflammatory appearances, although slight effusions of serum were observed. Engorgement was manifest when convulsions

preceded death. Slight congestion of the vessels of the pia-mater were observed by Dr. Peace, as well as inconsiderable effusion of blood and of serum in the right lateral ventricle. In some instances, Dr. Snowden could discover no evidence of morbid action of the brain; in three cases it was highly florid; in one of which there was serous effusion between the dura and pia-maters, in the two others it existed in the lateral ventricles. No sanguineous extravasation could be detected. Inconsiderable cerebral congestions were observed by Dr. S. Brown. Professors Frank and Sparenza uniformly ascertained that the brain had labored under inflammation or a kindred affection. From actual examination, it is inferred by Dr. James Johnson, that inflammation of the brain does not necessarily constitute a part of this disease.

Dr. Barkhausen appears to have had ample means of acquiring a knowledge of this disease, of which he has very profitably availed himself. His account is much more ample, and, from his apparent candor and sincerity, much more faithful, than that of any other pathologist. In the sthenic form, this author found in the brain a general turgescence of the arterial and venous capillaries. The pia-mater, and the substance of the brain, were frequently of a reddish aspect; this resulted from the great number of minute vessels, that were filled with a blood of a bright red color. Beneath the tunica arachnoidea, and into the ventricles, there was frequently a considerable serous effusion. No evidence was ever discovered of the recent exudation of coagulable lymph. The internal tunic of the carotid arteries presented an inflammatory redness. In young subjects, the evidence of inflammation was generally more unequivocal. Frequently the brain presented indisputable indications of acute inflammation. Portions of the arachnoid membrane were red; the vessels of the pia-mater and substance of the encephalon unusually turgescient; and into every part within the cranium there was an abnormal effusion of serum. The preceding indications of inflammatory action were never present, but in the sthenic variety.

In one instance of asthenic delirium tremens, Dr. Barkhausen observed a very remarkable emptiness of the vessels of the brain; generally, however, this circumstance was much less striking. There was present no unequivocal evidence of congestion, inflammation, serous effusion, or the exudation of coagulable lymph. The sinus of the dura-mater, and the veins that empty into it, were morbidly distended with blood. Several dissections were made by Mr. Howship, in which he found the large veins of the pia-mater distended with a pale, watery

blood ; there was serous effusion beneath the arachnoid membrane, and into the lateral ventricles. There was but little appearance of inflammation. Of a post-mortem examination, made by the eccentric Dr. Suttlese, he says, " To the utter astonishment of all present, there was wanting the usual appearance of blood, traceable in the healthy brain. It was literally blanched, and white throughout ; there were no arborescent vessels discernible ; and such an exemption from ordinary interstitial fluid, as to leave the diseased organ destitute of moisture."

Against the witnesses summoned to testify in regard to the state of the brain in delirium tremens, no solid objection can be urged to any one of them, with the exception of Professor Frank. He had an hypothesis to sustain, and perhaps it warped his judgment. It may be asserted, that the utmost reliance is not to be reposed in the statements of Professor Sparenza, Drs. Armstrong, and Staughton. It is true, Sparenza has adopted the pathology of Frank, but this, instead of invalidating the evidence of the former, should increase our confidence in the statement of the latter. We are not apt to make false or exaggerated statements, to support or defend the opinions of another. This is better calculated to produce self-abasement, than to flatter self-love. For the same reason, we would not reject the testimony of Dr. Staughton ; he has adopted the opinion of Dr. Klapp, and has furnished some additional facts in support of it. There is more reason to distrust the evidence of Dr. Armstrong, than of any of the individuals mentioned. His unjustifiable partiality for venous congestion might readily lead him into an error. The following inferences may, however, be safely drawn, without appealing to the authorities just mentioned.

First. That there is congestion of the veins of the brain, which we deduce from the testimony of Professor Chapman, Mr. Howship, Drs. Barkhausen, Shirlitz, Brown, and Peace.

Secondly. Drs. Barkhausen and Snowden testify to the existence of a florid or reddish appearance of the brain.

Thirdly. That there is actual inflammation of the brain, is proved by the evidence of Professor Chapman, Drs. Barkhausen, Shirlitz, Howship, and Hunt.

Fourthly. That inflammation is not of uniform occurrence, is established by the silence of Drs. Snowden, Brown, Suttlese, Peace, and the positive declaration of Drs. Johnson and Barkhausen.

Fifthly. That there is occasionally an exudation of coagulable lymph, is testified to by Drs. Blake and Hunt.

Sixthly. That sanguineous extravasation occurs, is proved by Professor Chapman and Dr. Peace.

Seventhly. That serous effusion beneath the arachnoid membrane, and into the lateral ventricles of the brain, is a circumstance of almost uniform occurrence, is fully demonstrated by the testimony of Professor Chapman, Drs. Barkhausen, Howship, Blake, Snowden, Shirlitz, Hunt, and Peace.

Eighthly. That there is, in some instances, a peculiar emptiness of the vessels of the brain, or a pale, watery blood, in the large veins of the pia mater, we are authorized to conclude, from the statements of Drs. Barkhausen, Suttleffe, and Mr. Howship.

Stomach.—As this is the organ upon which the morbid impression is made distinct, traces of abnormal action should be discovered. Thus we are informed by Professor Chapman, that he has uniformly found this organ in a state of high inflammation. In two instances, it is remarked by Dr. Snowden, the stomach “was florid, and appeared to have been highly inflamed.” By Barkhausen we are told, that the mucous membrane of the stomach was found reddened. The same observation is made by Dr. Lind. We are told by Dr. Peace, that “some few red specks existed,” some of the vessels of the stomach “were distended, and exhibited an arborescent arrangement.” We are not advised if these morbid appearances were considered the result of inflammation. In the case, however, of Ellen Mooney, we are told by Dr. Peace, that there were “patches of inflammation at the large extremity of the stomach.” Although it may be considered exceptionable, we cannot refrain from adducing the evidence of Dr. Staughton, in illustration of the point under consideration. This physician says, that the dissections which he has made himself, or in which he has participated, uniformly disclosed an inflamed stomach. By Dr. Coates, inflammation of this organ is altogether denied. This, to a certain extent, is doubtless true, for there are unquestionable instances of this disease, in which no trace of inflammatory action can be detected. In others, however, the authorities just appealed to satisfactorily demonstrate that inflammation does exist in the stomach, and sometimes in a most perfect form.

Why facts in illustration of the state of the stomach in delirium tremens, are not more numerous and diversified, is ascribable to two substantial causes. In the first place, for a considerable number of years, it was not suspected that the stomach was at all implicated in this disease. In consequence of this, post mortem examinations were not extended farther than to

ascertain the condition of the brain. In the second place, it has frequently happened, that permission could not be obtained to examine more than the contents of the cranium.

Liver.—In those who have for a considerable length of time indulged in the practice of frequent intoxication, the liver is rarely, if ever, found in a perfectly sound condition. In a state of intense predisposition, it cannot avoid being deeply implicated in delirium tremens. Thus, in the dissections made by Drs. Armstrong and Brown, this organ was in a state of congestion. By Professor Chapman, we are told, that in his dissections, the liver has invariably appeared variously diseased, and among numerous proofs of chronic derangement, there were “sometimes recent inflammatory marks.” It is stated by Dr. Snowden, that “this organ always exhibited appearances of a preternatural character.” In two subjects who had experienced repeated attacks of this disease, on making an incision into the posterior part of the right lobe of the liver, my knife was followed, in one, by a *pint*, in the other, by nearly a *quart* of sanious pus.” Dr. Barkhausen says, that “besides the alterations which have been described as occurring in the brain and membranes, morbid appearances were discovered also in other important organs, particularly in the liver and spleen, both of which are, it is well known, often the seats of disease in drunkards.” In a dissection which was made by M. Mannoïr, the liver was found very much enlarged; it was of a lighter hue than ordinary, and there were tubercles in its parenchyma in a state of suppuration. Proof to any extent of the existence of a chronic disease of this organ, might be easily adduced, but it is our wish to confine our remarks to those appearances that have resulted from recent abnormal action. That we have not been able to produce evidence of the implication of the liver in delirium tremens from a greater variety of sources, will not surprise the reader, when he is informed, that it has not engaged the particular attention of any author who has investigated the nature and seat of this disease. Indeed, it has been generally considered *hors de combat*, and what has been said of it has been more the result of accident than design.

Anomalous morbid appearances.—By Dr. Staughton, the bowels and peritoneum were found inflamed. The colon was seen by Dr. Peace of a uniform redness; the lining membrane of the aorta and pulmonary artery, the valves, particularly the semilunar, of this artery, and the mitral of the left ventricle, were seen of a reddish hue, by Dr. Washington; and Dr. Snowden has seen the pericardium distended, by a preternatural quantity of water.

In the preceding necroscopic investigation, several morbid appearances were noticed, which, it is manifest, are not necessarily a part of the disease under consideration. This remark is especially applicable to serous effusion and sanguineous extravasation, which are the incontestible effects of an action previously instituted in the brain. The congestion of the cerebral veins, which was noticed in several instances, evidently supervened, while the patients were in *articulo mortis*. This is a common case in almost every fatal malady. We have, therefore, no satisfactory reason to authorize the supposition, that the congestion of the veins of the encephalon in delirium tremens, is essentially unlike that which is of a very common occurrence in almost every affection, during the convulsive throes of dissolution. In this organ there is conclusive evidence of vascular irritation, inflammation, and nervous irritation. These are the only marks of disease which it can be pretended are primitive.

In the stomach, it is impossible to deny that, in some instances, there are marks of irritation and inflammation; and that in others, the evidence of inflammatory action is entirely absent. The same declaration is true of the liver, and doubtless had that organ been more closely attended to, the evidence of its participation in delirium tremens would have been more diversified and conclusive. Any traces of abnormal action in other tissues, is unworthy of particular notice. We shall now attempt to determine the organ primitively affected in this disease.

Proximate cause of Delirium Tremens.—This, we shall attempt to demonstrate, consists originally either in vascular irritation, actual inflammation, or nervous irritation of the stomach, with immediate sympathetic vascular irritation, actual inflammation, or nervous irritation of the liver, and, subsequently, of the brain. So conclusive are post-mortem appearances, that it certainly is unnecessary to pause to adduce additional proof in refutation of the opinion of Professor Frank, which asserts, that delirium tremens is uniformly an inflammatory disease. Nor is it requisite to consume our time in attempting to show by further proof, the absurdity of that hypothesis which maintains, that inflammation is never present. We are willing to permit the reader to make his deductions from the post-mortem appearances, as they have been exhibited. Although the opinion of Dr. Klapp is a nearer approximation to the truth than any hypothesis with which we are acquainted, it is radically defective. He predicates it upon the supposition, that there is inflammation existing in the stomach. This conclusion is too

sweeping to be sustained by proper evidence. Infinitely farther from the truth, is that of Dr. Coates, which contends, that that organ never exhibits, as connected essentially with delirium tremens, any marks of sthenic action. By this ingenious effort of Dr. Coates, victory has been given to the cerebral over the gastric pathology of delirium tremens. Convinced of the unjustness of this decision, we shall analyze the arguments of that author in detail.

The arguments of Drs. Klapp and Staughton, in favor of the gastric pathology, are fairly stated, and a refutation of them in detail, attempted by Dr. Coates. In the language of this author, they stand in the following order :

1. The causes which produce delirium tremens, or mania à potu, are of a kind calculated, a priori, to produce the impression that an irritation exists in the stomach, as this affection never occurs but after a debauch.

2. On dissection, the corresponding appearances are found. The dissections, made or seen by Dr. Staughton, uniformly disclosed an inflamed stomach ; and similar appearances have been found by others.

3. Vomiting, a foul tongue, the discharge, in many instances, by the effect of an emetic, of a thick, ropy, viscid fluid, of about the consistence of boiled tar, generally of a light, brown color, but sometimes quite black ; after the free removal of which, "recovery *most* probably takes place." All these are undeniable symptoms of gastric disorder, occurring in the disease under review.

4. The analogy of other gastric affections shows the very frequent occurrence of delirium as a symptom of them.

5. The success of vomiting, as a remedy, is considered by its advocates as sufficiently great to form an additional argument in its favor, upon the principle of the *juventia* and *lædentia*.

The legitimacy of the first argument is admitted by Dr. Coates ; but he attempts to elude its force, by saying, "that it is undoubtedly true,"—"that this application of irritating substances must have ceased." This is denied by Drs. Barkhausen and Lind ; and that it is not true, has been already satisfactorily demonstrated. Moreover, it is contended by us, that intoxication is persisted in to the period of attack in the sthenic and hypersthenic varieties only. For some days previous to the onset of asthenic delirium tremens, the habit of drinking is suspended, but in that variety we do not maintain the necessary existence of vascular irritation, or of actual inflammation.

The great difficulty which is to encountered in the invalidation of the second argument, is admitted by Dr. Coates. The existence of inflammation upon dissection, he cannot deny, but asserts, that "it is yet to be shown that it (gastritis) can produce a delirium of this species." He alludes, doubtless, to its peculiar spectral character. This is tantamount to asserting, that it cannot proceed from a plurality of causes; a position which we have fully established in the preceding pages. For if Dr. Coates were to admit, that this disease arises from more than one cause, and then say, that "it is yet to be shown that it (gastritis) can produce a delirium of this species," the remark would be manifestly absurd and preposterous.

To the establishment of our pathology, it is not necessary to prove the existence of inflammation of the stomach in every instance. This, indeed, is what we deny; but we maintain the existence of some form of gastric irritation in every case. To invalidate the remark of Dr. Coates, we shall clearly demonstrate, that this form of delirium may proceed directly from the stomach. Thus, by Dr. Armstrong we are informed, that the mental disturbance in *delirium tremens* "appears more like that which proceeds from hunger, in persons previously healthy, as sometimes happens in mariners, for example, than any other kind I have seen." To plain matters of fact, Dr. Klapp may be permitted to testify. Thus, he tells us, that after a patient had become decidedly convalescent, he dined upon turbot. Immediately afterwards he complained of gastric distress; through the night, his mind betrayed manifest evidence of aberration; the action of an emetic the next day completely relieved him. Another patient was convalescent; delirium returned, from eating articles that were rather indigestible; an emetic was administered, and he was immediately relieved. In a third instance, the same cause produced, in a convalescent patient, epilepsy, and a return of the delirium. After various remedies had been ineffectually employed, some unknown article unexpectedly inverted the action of the stomach, and immediately upon the rejection of its contents, the delirium subsided. These conclusive and concurrent facts render the inference irresistible, that spectral delirium may, and does, proceed from gastric irritation.

But if we can prove, that spectral delirium may occur in individuals in whom the existence of *delirium tremens* cannot be suspected, the remark of Dr. Coates is still more unanswerably refuted. In this undertaking we shall meet with no difficulty. Thus, the case of a lady, who was about forty years of age, and in the last stage of pulmonary consumption, is recorded by

Dr. Matthey. This individual imagined that her husband, who was then, and had been, absent for several years, had returned home. She believed firmly that she had seen him, and heard him speak, notwithstanding he commanded at that very time in the French army, which was then in Russia. From this time, her mind was exclusively employed with the means of rendering her husband comfortable; she entered upon this subject in all its details, and she would inquire of those who visited her, if they did not see him. This exclusive delirium constituted her happiness for about four weeks; the idea of the presence of her husband only ceased with her existence. A case, in some respects similar, is recorded by Dr. Crowther. The subject was a strong, healthy, muscular country girl, and in the relation of whose case no suspicion is expressed of a fondness for, or even an occasional indulgence in, the use of ardent spirits. This female obstinately contended, that she had frequently seen the deceased consort of her master. She believed that she had not only seen, but had actually spoken to, and had received from her a message, which she was to deliver to her master. No suspicion is expressed that she designed to dissimulate; on the contrary, these imaginary interviews so frightened her, that she was seized with hysteria and tetanus. By the editor of the *Edinburgh Medical and Surgical Journal*, it is remarked, "that we have known the same spectral hallucinations, and the same extreme tremulousness of the nervous and muscular system, (so common in *delirium tremens*,) take place more than once, in consequence of extreme losses of blood, artificially induced for the removal of diseases unconnected with disease of the brain, *c. g. in pneumonia*, and in the sudden and enormous discharge of uterine hemorrhage."

Notwithstanding the cases recorded by Dr. Alderson, under the denomination of *apparitions*, are considered by Dr. Coates specimens of *delirium tremens*, they may be appealed to as legitimate facts illustrative of the point under consideration. The first case is of a rather suspicious character; the other two, however, we hesitate not to say, had no connexion with *delirium tremens*. In the first instance, after a severe debauch, the patient determined to abstain in future from the use of ardent spirits. In a few days after this determination was formed, he saw phantoms, but continued to attend to the duties of his shop. When persons entered the door, he was unable to tell whether they were real customers, or merely phantoms. He reasoned upon his situation, and although he was convinced something was the matter, he did not consider himself insane. It is confessed by his physician, that upon every other subject, his mind

was perfectly sound. Objects upon which his eyes rested, excited his reflection, and he entered into a personal examination of them, to ascertain if they were real or unreal. When he found them to be phantoms, under a superstitious dread, which has often petrified with fear the stoutest hearts, a trembling seized every part, and perspiration flowed freely. The second case occurred in "a fine old lady, about 80 years of age," who was occasionally visited by phantoms, but she was perfectly rational in her conversation and conduct, and she could always prevail upon these imaginary intruders to retire, by ringing her bell. The third case occurred in a gentleman, who had labored for some time under excruciating cephalalgia, from which he obtained partial temporary relief by the formation of matter under the scalp. He then, for the first time, saw phantoms. Being a man of cultivated understanding, he soon convinced himself that they were not real. Though almost perpetually present, he conversed rationally upon topics of general literature, medicine, politics, &c. No other evidence of disease is mentioned. Nor is it intimated in the two last instances, that any fondness for spirits existed. Purgatives were chiefly instrumental in the cure of these cases.

In but one of these cases is there even probable evidence of the existence of delirium tremens. It is true, they saw phantoms; but do patients in this disease reason upon the subject, until they become convinced that they owe their existence to a morbid state of the body? Do they accurately recollect the numerous, exceedingly curious, and fantastic scenes that are acted while under the influence of mental hallucination? Do they sleep soundly, and awaken only to commune with these imaginary beings? Are they rational upon all other subjects? Does not the subject of the delirium engross every thought?

From these considerations is not the reader prepared to pronounce the remark of Dr. Coates a sophism of the very first magnitude? We have proved that spectral delirium may proceed from a plurality of causes; that it proceeds directly from gastric irritation, and why may it not also arise from gastric inflammation?

In answer to the third argument, it is remarked by Dr. Coates, that delirium never occurs "until the direct symptoms of gastric disorder have, in a great measure, subsided." But little confidence will be reposed in this declaration, by the reader who has perused with attention what we have said on this subject, in our critical examination of the description of this disease by Dr. Coates.

The redness of the stomach, Dr. Coates is inclined to ascribe

to the action "of highly irritating substances," such as emetic tartar and ardent spirits. We do not deny that under some circumstances, the injudicious administration of these articles may produce gastritis, but, that in this disease, inflammation of the stomach should be attributed to their prejudicial operation, is a conjecture wild and unwarranted. Should this organ labor under vascular irritation or inflammation, they would doubtless, convert the former into the latter, and the latter would be exasperated by their action. But these are abnormal states of the stomach not admitted by Dr. Coates, consequently, his remarks could not have been predicated upon the supposition of their existence. He supposes that the articles alluded to, have the power of awakening inflammatory action in the stomach after delirium tremens is firmly established. Upon what principle is it that alcohol is supposed to possess the power of producing this effect after the occurrence of the disease, where this attribute is denied it immediately before? Is it not perfectly incomprehensible, that half a pint, a pint, or even a quart of ardent spirits in the course of the day, should excite gastritis, when the same organ had been in the habit of receiving much larger quantities for months, and even years, with perfect impunity, at least in this respect? But the stomach, in this disease, is generally, much more insensible after the attack than before; the result should, therefore, be directly the reverse of that supposed by Dr. Coates. Moreover, Dr. Hereford derived uncommon success from ardent spirits, with which he treated this disease exclusively. Upon what principle is this to be explained?

If the comparatively insensible stomach of the drunkard is so easily inflamed by the action of emetic tartar, is not the safety and success with which we throw this article into the exquisitely sensitive stomachs of infants laboring under croup, whooping-cough, &c., altogether incomprehensible? The "patients opened," it is remarked by Dr. Coates, "had all been subjected to the action of highly irritating substances;—to that of large doses, either of alcoholic drinks, or of emetic tartar." He then asks the question, "Is it fair, after the physician has himself violently irritated the stomach, to assign its redness after death, as the cause of the disease he has himself attempted to remove?" This certainly was the treatment of Drs. Klapp and Staughton; but if it can be established, that inflammation of the stomach has been detected after death, when no emetic tartar had been administered, a recantation of this ungenerous charge should be made by its author. Thus, in two instances, we are informed by Dr. Snowden, the stomach was highly inflamed, and yet that physician never used a grain of emetic

tartar. In the case of Ellen Mooney, recorded by Dr. Peace, this article was not taken, and yet there were patches of inflammation found at the large extremity of the stomach; nor was it taken, as far as we can learn, in the case of Dr. Washington, yet there were red specks in the stomach, and the inner surface of the colon was uniformly red. Though Dr. Barkhausen used nauseating doses of tartar emetic to a very considerable extent, and with much advantage; he never ventured upon more than ten or twelve grains in the twenty-four hours, and this only in particular cases; yet we find that in his necroscopic examinations, he detected redness of the mucous membrane of the stomach. Thus, it appears manifestly evident, that Dr. Coates is egregiously mistaken, when he supposes that inflammation of the stomach is, in every instance, to be attributed to the deleterious operation of such irritating articles as alcohol and emetic tartar.

We are referred by Dr. Coates, to the remarks made by him "on the morbid dissections," for an answer to the fourth argument. We appeal to what we have urged on the same subject for a full and satisfactory refutation of this answer. We shall not attempt to support or defend the fifth and last argument, as it is not connected with the establishment of the opinion of the nature of this disease maintained by us.

Thus, it distinctly appears, that the four chief arguments adduced by Drs. Klapp and Staughton, in support of the gastric pathology of delirium tremens, though fiercely impugned by Dr. Coates, have not lost any of their original force.

In farther illustration of the influence exercised by disordered states of the stomach, over the functions of the brain, a few additional facts may be, with propriety, mentioned, as this is a very important subject. It is stated by Dr. Matthey, that he has repeatedly seen delirium promptly removed by the operation of an emetic. He mentions the case of a female, who was completely maniacal, and in whose body it was impossible to find any other marks of disease, but a scirrhus state of the pylorus and an enlargement of the stomach. A striking illustration of the point under consideration, is recorded by M. J. De Sausa Ferras. A Portuguese woman was persuaded to eat some cakes in which portions of twisted hair were incorporated, from which proceeded loss of appetite, nausea, oppression at the stomach, and at length, complete derangement of the mind, with watchfulness, and absence of all desire to eat or drink. A ball of hair, of the size of a chestnut, was brought up from the stomach by the action of an emetic, and the delirium ceased

immediately. Without detailing a greater number of particular cases, it may be remarked, in general terms, that numerous instances of delirium, proceeding from gastritis, enteritis, gastro-enteritis, and ulceration of the alimentary canal, are recorded by Scipio Pinel, Esquirol, Lauger-Villermay, Laudre-Beauvais, Schwilgue, Prost, Descamps, and Gastaldy.

That there is an obvious difference between the peculiar delirium of the disease under consideration, and common insanity, must be confessed by every enlightened pathologist; but that there is a species of alliance between all the forms of mental alienation, is equally true. If, therefore, it has been satisfactorily demonstrated, that derangement of the stomach does actually give rise to insanity in certain cases, will it not afford strong presumptive proof in favor of the gastric origin of delirium, in the disease under consideration, especially as it is indissolubly associated with so great a variety of symptoms that point directly to the stomach? Under this impression, we invite the attention of the reader to the opinions of those pathologists who have made mental alienation a subject of particular investigation.

That the exercise of the intellectual faculties is in some manner connected with a healthy state of the abdominal viscera, is an opinion of great antiquity. Thus, it is remarked by Hippocrates, "*Quod si in hypochondrio pulsus quoque insit perturbationem significat vel delirium.*" In reference to fever, the following remark is made by the same distinguished individual: "*Juxta ventrem in febre palpitationes mentis emotiones faciunt.*" By Galen we are informed, that "epilepsies, carii, comata, catalepsies, deliria, and some varieties of melancholy, arise from an enfeebled stomach, by its consent with principal part contained in the brain and nerves." By Aretæus it is affirmed, that "the cause of insanity is in the head and precordia, which are sometimes affected simultaneously; sometimes the one occasions the other. But the principal seat of disease in mania and melancholia, is in the viscera, as that of frenzy is, for the most part, in the head." According to Van Helmont, the mind has its seat ordinarily in the stomach, and insanity proceeds from the hypochondrium. By the celebrated Baron Van Swieten it is said, that "delirium is very frequently observed, when the cause of the disorder is seated about the precordia; which cause being removed, the delirium is also removed, though no remedies at all be applied to the head." The attainments of the authorities to whom we have appealed in this paragraph, were unquestionably not very extensive in relation to mental diseases; but from the opinions they held, a

very important inference may, nevertheless, be deduced. It is self evident, that the symptoms of visceral disease must have been very conspicuous, in order to have induced them to adopt the sentiments which have been just expressed.

Fuller investigation, it appears, has done little more than to establish the correctness of opinions familiar to the most ancient physicians, of whom we have any knowledge. Thus, it is remarked by the illustrious Dr. Whytt, that "a disordered state of the stomach and intestines, with wind or noxious humors lodging in them, will sometimes so affect the brain, as to deprive people of their reason." By Sir Alexander Crichton, it is said, that the diseased state of the brain, which gives rise to mania, "in many instances" is a secondary affection, "dependant upon a morbid condition of the epigastric or some other abdominal organ." We are told by Dr. Good, that mania "may, and often does, commence in some structural or functionary affection of the abdominal organs, is perfectly clear." By Dr. Cox it is asserted, that "this viscus (the stomach) in maniacs seems very frequently the seat of the disease." We are told by M. Pinel, that "the preludes of the invasion and return of maniacal attacks may be various; but it seems, in general, that the primary seat of this alienation is in the region of the stomach and intestines." It is asserted by Dr. Spurzheim, that "the greatest number of cases of insanity produced by sympathetic causes, originate from deranged functions of the digestive organs." M. Proust, an eminent Parisian physician, contends, that the seat of insanity is always in the stomach and bowels. By Dr. Pritchard it is affirmed, and he is sustained by the authority of Dr. James Johnson, that abdominal obstructions have a stronger tendency to derange the cerebral functions, than *e converso*.

Thus, I think we are warranted in the conclusion, that we have established the fact, by a course of reasoning inductive, indirect, as well as analogical, that the stomach must, of necessity, be diseased in delirium tremens. We shall now direct our attention to the liver, in order to accomplish, in regard to it, the same object, if possible.

That the liver is necessarily implicated in delirium tremens, appears to us almost intuitively evident. The extent, however, of its disease, cannot be so readily determined. The post-mortem appearances clearly reveal the fact, that this organ is actually, and, in some instances, very extensively, disordered. The conclusive proof which has been adduced in demonstration of the existence of gastric irritation, affords very strong presumptive evidence in favor of the idea that the liver participates

in delirium tremens. As the fair result of manifold experience, the assertion is authorized, that when the functions of the stomach are deranged, those of the liver are uniformly affected, to a greater or less extent.

Independently of these considerations, however, we were conducted to this conclusion by the simplest process of clear and unanswerable reasoning. It has been fully proved by repeated observation, that of all the organs of the animal economy, the liver is infinitely the most obnoxious to the deleterious action of ardent spirits. In illustration of the truth of this assertion, it is said by Dr. Trotter, that "the liver, indeed, more than any other viscera, appears to be particularly subject to diseases from this cause," (hard drinking.) In another place it is remarked: "In most cases it (icterus) may be deemed the birth-right of dram drinking, or the use of grog." Again, it is emphatically declared: "In the body of the inebriate, the liver might be justly called the *officina morborum*!" On the same subject, we are informed by Dr. Friedlander, that in those who have been in the habit of intemperate drinking, structural alterations are found in the viscera, which contribute to digestion; the pancreas, the liver, and gall-bladder, present an endless variety of preternatural appearances; bile, and the other secretions, take place irregularly, and of a manifestly degenerated quality. Thus, it distinctly appears, that the liver in the intemperate is always intensely predisposed to disease. By Celsus it was affirmed, that when abnormal action is instituted in the system, the enfeebled or predisposed organ is invariably the chief sufferer. The observation of every physician has furnished him with repeated instances in confirmation of the truth of this remark. As a general rule, then, it is of little consequence what may be the particular nature of the disease with which an inebriate may be attacked, the liver must, of necessity, be intensely implicated. What, therefore, must be the result, in a disease emphatically a disease of the drunkard?

Of the symptoms that are developed in delirium tremens, those that indicate a morbid state of the liver are numerous, diversified, and in some degree, pathognomonic. Thus, the tongue is frequently of a decidedly bilious character. There is frequently vomiting of bile, and almost invariably, when tartarized antimony has been signally beneficial, a considerable quantity of that secretion, in a vitiated state, has been brought up from the stomach. There is frequently epigastric heat, and tumefaction of the abdomen, particularly of the left hypochondrium. In some cases, the skin, but particularly the eyes, were jaundiced.

The discharge of vitiated bile from the stomach, or the evacuation of dark, tenacious, and offensive stools, is incontrovertible proof of the existence of a deranged condition of the liver. When stools of this kind are produced, unless the disease in its nature is indomitable, an amelioration in the character of the symptoms invariably and immediately succeeds. In proof of this, the testimony of Dr. Klapp may be adduced. Although we have the utmost faith in the declarations of that individual, we are not, for very obvious reasons, in favor of appealing to his experience. On this point, however, he cannot be suspected of undue partiality, for it was not his design to illustrate derangement of the liver, but that of the stomach. In a violent case of delirium tremens, Kr. Klapp gave tartarized antimony, which produced a discharge of "a large quantity of a dark green colored sordes," after which the patient had some sound sleep. In a second case, the same article produced a discharge from the stomach of three pints of a green and extremely bitter liquid; a quantity of tough, brownish mucus, and from the bowels "two large bilious stools," which proved highly beneficial. Two days afterwards, calomel and senna infusion were exhibited, from which resulted "several dark colored stools," and in two days more, the man was in the street, in good health. In a third instance, the same medicine was administered, and "a large quantity of bilious sordes were rejected; purging succeeded, and many dark colored stools were produced. Comfortable sleep followed. Of the same import are two other cases, recorded by Dr. Klapp. In a case recorded by Dr. Eberle, ipecacuanha was administered, and the discharges from the stomach were copious and bilious. The next day the patient was rational. In the case of Dr. Flagler, the matter rejected, *sursum ac deorsum*, was characteristically bilious. In the case of Dr. Gorrie, the alvine evacuations were bilious, and excessively abundant. By Dr. Staughton we are told, that the fluid vomited "is thick, ropy, and viscid, of about the consistence of boiled tar, the color generally a light brown, though sometimes it exhibits an entire blackness." When a free discharge of this matter occurs, "recovery most frequently takes place." Dr. Armstrong speaks of the vomiting of a "coffee-colored fluid" in this disease. We are not in favor of appealing to our personal experience for the establishment of our peculiar theoretical opinions; but we cannot refrain in this place from declaring, that we have never seen a case where the liver was not indomitably torpid, that we could not produce dark, offensive, bilious alvine evacuations, and that

they never failed to be followed by the most decidedly salutary effects, when they were not urged to an unnecessary extent.

That derangement of the functions of the liver is capable of producing aberrations of the human intellect, admits of the fullest and most incontrovertible proof. This fact was familiar even to Hippocrates ; on this subject, he says, "*A bile, quando commota ad viscera et septum transversum resederit.*" By Morgagni we are informed, that a young priest was seized with jaundice, together with a few inconsiderable symptoms of derangement of the stomach. In a few days, he had delirium and convulsions, and on the fifth day he died. A young man was much frightened ; the next day he had icterus ; delirium and convulsions came on, and in twenty hours from the super-vention of delirium, he died. A third case, very much of the same character, is recorded by Morgagni. In a case of genuine delirium tremens, recorded by Dr. Matthey, the liver, he tells us, was manifestly engorged, and jaundice supervened. Mr. Perfect has detailed a case of this disease, in which the patient was also decidedly jaundiced.

Several very interesting cases of mental aberration, originating from the same cause, are detailed in the Dublin Hospital Reports, by Mr. Marsh. A very aged man had jaundice, and it gave rise to mental derangement. By such medicines as act upon the stomach and bowels, he was cured. Frequently afterwards, jaundice manifested a disposition to return, and always in company with disturbance of the mind. In an old lady, the bowels were overloaded, in consequence of which, the descent of bile was prevented ; jaundice was produced, and immediately afterwards, derangement of the intellectual faculties. A strong, muscular man had jaundice ; he became deranged, and died. A young woman had been much enfeebled by mercury ; upon the reception of unpleasant intelligence, she became jaundiced ; in a short time, so great a degree of cerebral oppression was produced, that it destroyed her. Dr. Marsh was informed by Dr. Colles, that a young man who had been taking alterative doses of calomel for several weeks, became deeply jaundiced. In two or three days afterwards, he was delirious, which was followed by convulsions and death. Every viscus in the body was sound.

That common mania is frequently connected, in a direct manner, with the state of the liver, is asserted by many eminent pathological anatomists. This is so common an occurrence, that Tissot and Rhan were of opinion, that out of twenty cases, not less than eighteen are justly ascribable to the liver and stomach. The truth of this opinion is confirmed by the expe-

rience of the celebrated Stoll. Dr. Cheyne, in his work on Comatose Affections, cites a statement of Mr. Todd, one of the surgeons of the House of Industry, from which it appears, that in every dissection Dr. Todd has made after idiotism and mental derangement, (and he has made upwards of four hundred,) he has found the liver more or less diseased. By Dr. Matthey it is said, that “*L’embarras de la circulation dans le systeme hepatique, et les derangemens des fonctions du foie ou de la secretion de la bile, sont tres-certainement le siege le plus ordinaire de la melancolie, quelque fois aussi de la manie. Vena porta, porta malorum.*” By Dr. Saunders it is remarked: “In short, I do not know a disease of the brain or nervous system, in which it is not necessary to examine the state of the liver after death more narrowly than has hitherto been done.” In 259 dissections of maniacs, made by Esquirol, Villermay, Beauvais, Schwilgue, and Pinel, there were only forty-one cases of chronic affection of the brain, while there were not less than sixty-eight of the liver and digestive organs. It is said by M. Esquirol, that one eighth part of all the deaths which take place in the Salpetrière, at Paris, arises from complaints of the liver.

The mode of cure had recourse to with most success, in the treatment of maniacal affections, is likewise demonstrative of the morbid condition of the liver. Thus, three interesting cases of mania are recorded by Dr. Lentin, which were occasioned, he says, by over-exertion of the intellectual faculties, that were radically cured, “after the evacuation of great quantity of bilious matter.” From Dr. Edward Percival, we understand, that in mental alienation, the only true or salutary evacuation is from the intestinal canal. We are told by Dr. James Johnson, that it is an admission made by most writers on insanity, that such purgatives as act upon the biliary secretions, are exceedingly useful.

The conclusion to which this diversity of considerations directly leads, we do not regard as at all questionable. Arguments direct, indirect, and analogical, contribute to establish the morbid state of the liver in delirium tremens, as a theorem, the truth of which cannot be contested. That the brain is implicated in this disease, we shall not attempt to deny; nor is it necessary to appeal to additional evidence, to render this truth more clear or satisfactory. The point which is now to be determined, is, whether the stomach, liver, or brain, feels the primary impression. Between the two former, there can be no contest. While it is certain, that it is the stomach, if either, the determination of this point with precision would lead to no

practically useful result. If they are the organs upon which we wish to make, in the first place, the principal impression, those therapeutic agents that will accomplish the removal of disease from one, will also eradicate it from the other. The brain, however, will not so readily yield its claims to priority; precedence has been given it by respectable authorities, and, although the control which it exercises in the pathology of this disease is manifestly usurped, it will not be given up without a struggle. To determine the disputed claims of the brain and the chylopoetic organs, a rule which we consider in the main unexceptionable, has been furnished by the learned and accomplished Dr. Good. It is remarked by this author, that when "we are made acquainted with the history of the incipient symptoms, we have a tolerable clue to guide us; and, for the most part, may safely decide, that the region primarily affected, is that which first evinces morbid symptoms." If the rights of the stomach to precedence in this disease are not in accordance to this criterion, fully and satisfactorily established, we will admit, that all we have urged in the preceding pages with so much earnestness, is false and unfounded.

Thus, Dr. Snowden, who informs us that he has recorded the symptoms in the order in which they were developed, speaks of a dry and hard tongue, constipation of the bowels, "stomach much disordered, and affected with frequent vomiting," to such a degree, that it is unable to retain aliment of any kind; even fluids are ejected immediately when drank,—as among those symptoms that precede the occurrence of delirium. By Dr. Staughton we are told, that nausea, and some other symptoms, having continued "a day or two, a slight confusion of ideas is perceived." According to Dr. Barkhausen, who has divided this disease into distinct stages, that there is in the first stage of the sthenic form uneasiness at the precordia, with an inclination to eructation; the tongue is often coated, and the temper irritable, but no delirium. This does not occur until the second stage. In the first stage of the asthenic form, there is great uneasiness at the precordia, eructations, vomiting, loss of appetite, diarrhea, acidity, flatulence, great foulness of the tongue, pains of the stomach, &c., but no delirium. Before the occurrence of delirium, Dr. Blake says, there is nausea, very troublesome vomiting, disordered bowels, furred tongue, and oppression at the precordia. Dr. Armstrong records, loathing of food, oppression at the precordia, retching, vomiting, and white, moist tongue, before delirium. Dr. Sutton says, this disease does not always attack suddenly, for there is frequently for some days before, loathing of food, vomiting, and

furred tongue. Dr. Brown tells us, that the symptoms that attend the early stage of this disease are, indigestion, oppression at the pit of the stomach, nausea, sometimes retching and vomiting. These authorities are abundantly sufficient to establish the fact, that the symptoms of gastric irritation do clearly and distinctly precede those that denote derangement of the functions of the brain. No position can admit of clearer proof, or fuller illustration. What reliance, therefore, are we to place in the opinions of those that not only declare the brain to be primarily, but exclusively affected? No two assertions can be more gratuitous and unfounded. They are at war with pathological and clinical observation, and the sound deductions of philosophical reasoning.

All the abnormal alterations, therefore, which are observed in the brains of those that fall victims to delirium tremens, are secondary or consecutive. They arise exclusively from the sympathetic impression made upon that organ by the deranged state of the stomach. This declaration will not surprise those who are acquainted with the manifold sympathies which exist between that organ and the different tissues of the body, but particularly the encephalon. Almost simultaneously with the awakening of gastric irritation, the liver is forced into sympathetic co-operation with the stomach. We shall not pause to demonstrate the existence of this sympathy. The following are the words of M. Montfalcon, the author of the article *Sympathie*, in the *Dict. des Sciences Medicales*: "Il est peu de maladies aiguës des viscères qui n'affectent pas le foie par sympathie." The stomach is emphatically the emporium of both health and disease, with which the liver, an organ almost of as much importance, acts in this complaint in harmonious concert. The impression, therefore, made by their consociated influence upon the brain, must be rapid, and uncommonly intense. The intercourse subsisting between these two organs and the brain, is satisfactorily explained by the extensive distribution of the par vagum, but more especially of the intercostal nerve over the abdominal viscera.

An application of the preceding principles to the different varieties of delirium tremens, shall now be attempted.

The general character and habits of those individuals attacked by sthenic delirium tremens, must now be recollected by the reader. Their intemperate habits are usually persevered in to the time of the seizure. Indeed, it is generally the immediate result of a more excessive debauch than the individual was accustomed to indulge. Let us now attend for a moment to the conspicuous effects which result from the action

of ardent spirits. What are the phenomena of a paroxysm of intoxication? An excitement, or an excess of energy in the exercise of all the faculties, corporeal as well as intellectual. This artificial state of excitement continues in duration and intensity, in a ratio corresponding precisely, for a certain length of time, with the amount of spirits drunk, and the intervals at which it is taken. A state of universal, and, in some instances, overwhelming languor, will ensue, whenever its stimulating influence begins to subside. The functions are now exercised as inefficiently as they were before with energy.

But what is the impression made upon the organ upon which the spirits first act? Irritation, unquestionably. This irritation is immediately transmitted to the brain, in consequence of which, that organ is stimulated to an unwonted exertion of its functions. These effects subside in proportion to the rapidity with which the gastric irritation is removed. This is usually the course pursued for months, and even years, and the drunkard is permitted to emerge from his debauch, without experiencing immediately any alarming interruption of health. It is perfectly impossible, in the nature of things, for him to escape with apparent impunity always. Every fit of intoxication, repeated by the individual, progressively enfeebles the natural powers of the stomach by which it had hitherto been enabled to get rid of the irritation. His predisposition to delirium tremens daily becomes more intense. In this state, he commits an unusually excessive indulgence; but his powers fail him. The stomach is now rendered unable, by its unaided exertions, to accomplish the removal of the irritation. What is the consequence? Why, the actual radication of disease in the stomach; to speak emphatically, the fit of intoxication virtually continues, instead of subsiding, as usual. This morbid state may consist in simple vascular irritation, or actual inflammation of the stomach; the particular character of the result depending exclusively upon the violence of the predisposition, and the intensity of the exciting cause. If they have both been great, the form which the disease will assume will be inflammatory.

It is a law established by M. Broussais, to which I believe there will be found few real exceptions, that "*l'irritation sympathique est de même nature que l'irritation primitive.*" Thus, if the organ primitively diseased labors under inflammation, the tissue upon which the sympathetic impression is made, will be inflamed; if the primitive irritation is hemorrhagic, from the sympathizing organ there will be a discharge of blood; if the original affection is simply vascular, or nervous irritation, the sympathetic impression will be of the same character precisely.

In accordance, therefore, with this law, as the affection of the stomach in sthenic delirium tremens consists in simple vascular irritation, any sympathetic impression that is made upon distant organs must be of the same kind. Consequently, we have vascular irritation of the liver and brain, but the latter supervenes so soon upon gastric irritation, and the symptoms of its existence are so conspicuous, that those that proceed from the stomach and liver are not very manifest. Engrossed with the former, some careless observers have been disposed to deny the existence of the latter altogether. The attentive practitioner will not commit this oversight. The feebleness with which they are developed, so far from being singular, is in accordance with a well established and familiar principle. When the organ sympathetically impressed suffers intensely, the organ primitively affected very generally ceases to complain. In bilious fever we have an illustration of this. The stomach is unquestionably the seat in part of this disease, and when the head is not affected, we never fail to find a very conspicuous evidence of gastric irritation; but should the patient become delirious, the stomach is immediately tranquillized. By the asthenic and bilious varieties of delirium tremens, this truth is illustrated and enforced. In these varieties, there is great gastric disturbance; but so soon as delirium supervenes, the symptoms that indicate it either subside, or are moderated.

In consequence of the sympathetic irritation of the brain, upon the principle *ubi irritatio ibi fluxus*, blood is determined in morbid quantity to that organ, from which arise pain, vertigo, tinnitus aurium, &c. Trembling of the hands, insomnium, &c., admit of so easy an explanation, upon the principle of encephalic irritation, that we shall, for the sake of brevity, leave its application to the reader.

Should actual inflammation be excited in the stomach, instead of vascular irritation, we shall have hypersthenic delirium tremens. Upon the principle that the primitive and sympathetic irritations are precisely alike, we shall have, in this form, inflammation of the liver and brain. So close an alliance exists between vascular irritation and real inflammation, that it will not be denied, that a slight increase in the predisposition of the individual, or augmented intensity of the exciting cause that produces the former, would awaken the latter. In this variety, the gastro-cerebral sympathy is more active, if possible, in consequence of the greater violence of the abnormal state of the stomach, than in sthenic delirium tremens. Derangement of mind is almost immediately developed, and, therefore, the symptoms of gastric and hepatic inflammation are, with some

difficulty, detected. In this variety, the determination of blood to the brain is so excessive as, in some instances, to produce convulsions and apoplexy in the very first stage of the disease. Should neither of these events, however, happen, the encephalon will, in most cases, be intensely affected. The symptoms thus developed are easily explained.

Asthenic delirium tremens occurs under circumstances, precisely opposite to those which give birth and impart character to the sthenic and hypersthenic varieties. Here, the habit of insobriety has been protracted and excessive; constitutional energy has been radically impaired, if it has not been literally annihilated; the functions of the chylopoetic organs have long been performed inefficiently, and they have now almost entirely lost their vigor. The life of the drunkard thus circumstanced, is emphatically a forced state. To the continuance of his miserable existence, protracted and excessive drinking has rendered the employment of ardent spirits absolutely indispensable. Should he, therefore, voluntarily determine to abandon his deleterious habit, or from necessity be compelled to abstain from his daily, and even hourly free potations, all his powers languish, and he becomes, both corporeally and intellectually, a prey to the most unendurable and devouring anguish: he becomes an object of deep, afflict-ing, but undeserved commiseration.

Men who habitually labor under excessive artificial excitement, or who, as Pliny justly remarks: "*Tanquam ad perdenda vina agniti, et tanquam effundi illa non possint nisi per humanum corpus*,"—take but little nourishment, and that immediately after the ingurgitation of a stimulating draught. Previously, the stomach is totally incapable of retaining it. Often have I seen the drunkard ineffectually swallow quarts of water, to extinguish an unquenchable thirst; the moment it reached the stomach, it was rejected. Under such circumstances, a large draught of spirits would remove the intranquillity of that organ, as if by incantation. The unsteady hand, and clammy feel of the skin, which accompany this tumultuous state of the stomach, disappear also almost immediately.

When, therefore, the stimulus which served to preserve the functions of life in a state of equilibrium sufficient to perpetuate a loathsome existence, but absolutely incompatible with sound health, is withdrawn, a state of general enervation must be the inevitable result. In the stomach, for the want of due extimulation, violent nervous irritation is instituted. This is denoted by nausea, vomiting, oppression at the precordia, furred tongue, trembling of that organ and of the hands, insomnium, quick,

feeble pulse, and copious perspiration. Generally, during the first twenty-four hours, and frequently longer, these symptoms alone are conspicuous. Now, however, in obedience to the law supported by M. Broussais, the effects of sympathetic nervous irritation in the development of delirium, are manifested by the brain. No sooner is this symptom fairly revealed, than we see a manifest moderation in the evidences of gastric irritation, and, in many instances, a total calmness of the stomach.

Why, it may be asked, is delirium more tardily developed in the asthenic, than in the sthenic and hypersthenic varieties? For three substantial reasons: in the former, the sensibility of the stomach is much less than in the latter; its sympathies, therefore, are not so easily awakened; in consequence of which, the sympathetic nervous irritation of the brain will not be sufficient to produce delirium, until the gastric irritation becomes so intense as to arouse, in a degree, the almost extinguished sensibility of the stomach. Moreover, when a sympathetic nervous irritation is transmitted to the *sensorium commune*, it is usually disseminated throughout the animal economy. It is to this circumstance that we are to ascribe the fact, that in asthenic delirium tremens it is rare to detect obvious marks of abnormal action in the substance of the encephalon. For this reason also it is, that the brain frequently manifests no evidence of irritation, with the exception of slight cephalalgia, although it may be directly sympathizing with a stomach laboring under excessive irritation. So violent, however, is the impression made upon the brain by the affection of the stomach, that delirium is not only produced, but convulsions also. It may, likewise, with great propriety, be ascribed as a reason for the comparative slowness with which delirium recurs in the asthenic variety, that the sthenic and hypersthenic are diseases of excitement, and are, consequently, associated with determination to the head, while the asthenic is one of depression, and generally unconnected with that circumstance.

How, it may be inquired, does it happen, that the pathognomonic symptoms of delirium tremens are produced by forms of affection so much unlike, as vascular irritation, inflammation, and nervous irritation? The sthenic and hypersthenic varieties result immediately from a debauch; indeed, they may be considered, with great propriety, protracted and exasperated states of intoxication. The stimulus of vascular irritation, or inflammation, produces a continuance of the excitement, which, in the first place, resulted from the irritation excited in the stomach by the direct action of ardent spirits. The suspension

of the use of this article is no proof that the effects which it has produced should cease. Ordinarily this is the case; but the stomach is now incapable, by the exertion of its natural powers, to effect an eradication of the irritation, which was of easy accomplishment on many former occasions. Ardent spirits have excited gastric irritation, which continues; therefore, its effects must be manifested. As rationally might we suppose, that after malaria has produced its specific impression, that convalescence should be immediately established upon a removal of the patient beyond the reach of its influence. Consisting of vascular irritation and inflammation, superadded to the energies of a slightly impaired constitution, the sthenic and hypersthenic forms must, of necessity, be to a greater or less extent, re-active. We speak thus cautiously, for should the practitioner expect to find re-action so energetic as is usually exhibited in these forms of gastric affection, when they exist in individuals who have not been exposed to the deteriorating influence of intemperate habits, he will, to a certainty, be disappointed. Independently of the symptoms, the inability of the stomach to remove the irritation, and the course of treatment found most successful, is clear proof and full illustration. Modifying and restraining re-action, it is to the peculiar character of the remote cause that we are also indebted for the pathognomonic symptoms of delirium tremens. This declaration stands in need of no evidence to sustain it. The controlling influence of remote causes, in imparting character to most acute diseases, is a theorem deduced from the fullest and most diversified experience. It is to the various degrees of concentration in which malaria acts upon the human system, that we are to ascribe, in accordance with universal consent, the manifold types of fever.

In asthenic delirium tremens, gastric irritation is the result of the absence of the exciting cause, which gave birth to the varieties just noticed. This may appear paradoxical; when, however, we recollect that mental aberration results from inanition, and that the morbid activity of the bowels in cholera morbus is produced by the absence of bile, it will not occasion surprise, that we should assert, that relinquishing the use of an accustomed stimulant will produce gastric irritation. This irritation must, of necessity, be nervous, for there is too little energy of constitution to produce vascular re-action. Here the same remote cause is virtually in operation, and the same pathognomonic effects are produced.

In bilious delirium tremens, the first impression made is, of course, miasmatic; the consequence is, the development of

bilious fever. Owing to the shattered and enfeebled state of the constitution, the symptoms which denote the existence of this disease, will possess little regularity or energy. The effect produced by the direct action of malaria will be, vascular irritation, rarely, if ever, real inflammation. In the temperate, either of those states is usually sufficient to produce intense and regular excitement; but in the intemperate, the system has been deprived of the energy necessary to promote this result. Re-action is partial and inconsiderable. After the onset of this species of bilious fever, the system of the patient is precisely in that condition which precedes the development of asthenic delirium tremens, with a single exception. Previous to the development of the latter, the use of ardent spirits is suspended; and in the former, the nature of the disease renders this necessary. In addition, therefore, to the nervous irritation of the stomach excited by relinquishing the use of ardent spirits, there is vascular irritation, the result of the miasmatic impression. The aggregate amount of these two species of irritation is certainly greater than commonly exists in asthenic delirium tremens, and should, therefore, produce delirium sooner than in the latter, in direct contravention to a positive declaration of the author. But, it should be recollected, that those two varieties of irritation are essentially different in, at least, two of their prominent characteristics. They are produced by different causes, and exist in different tissues of the same organ. Upon the principle, therefore, that no two different irritations can exist together for any length of time, it is impossible for those under consideration to co-operate in the production of a common result; an ascendancy must be gained by one or the other of them. This must invariably be in favor of nervous irritation, for two reasons: in the first place, there is less predisposition to bilious fever than to delirium tremens; and in the second place, it is very evident that, as vascular irritation has precedence, it has fair opportunity to make its characteristic manifestations; if, therefore, it suffers nervous irritation to be developed, the latter must gain the ascendancy. For it is very certain, if vascular irritation could not prevent the institution of nervous irritation, it cannot prevent it from becoming so conspicuous as to gain a predominant influence in imparting character to the disease.

Between vascular irritation, the result of the miasmatic impression, and nervous irritation, the result of suspending the use of ardent spirits, an active conflict is instituted. During this conflict, the symptoms will assume no very decided character; they will resemble, in various degrees, those that occur

in common bilious fever, and also, those that belong to asthenic delirium tremens. Early in the disease, the former are the most conspicuous, but as victory must eventually be declared in favor of nervous irritation, the latter will generally obtain, in the course of four or five days, a decided ascendancy. The length of time during which this struggle shall last, will depend almost entirely upon the remaining strength of the constitution. The energy of the constitution, and the predisposition to delirium tremens, exist in an inverse ratio.

The length of this pathological disquisition must be pardoned, on account of the magnitude and importance of the subject. Principles are absolutely necessary, to render the treatment of disease rational and scientific. The want of such, as are fairly deducible from a comprehensive view of the facts, has been sensibly felt by the author, in the treatment of the disease under consideration. It must be confessed, that we have been furnished with numerous very important practical precepts; but the most of them, either by an improper application, or injurious extension, have proved extremely deleterious. We may have utterly failed, but it was the desire of the author to prevent this in future, and to fill the wide hiatus, evidently existing, in regard to the pathology of delirium tremens.

[TO BE CONTINUED.]

REVIEW.

- ART. I.—1. *A Practice of Physic, comprising most of the Diseases not treated of in "Diseases of Females," and "Diseases of Children."* By WILLIAM P. DEWEES, M. D., Adjunct Professor of Midwifery in the University of Pennsylvania, &c. In 2 vols. 8vo. Philadelphia: Carey & Lea, 1830.
2. *A Treatise on the Practice of Medicine.* By JOHN EBERLE, M. D., Professor of Materia Medica and Obstetrics, in Jefferson Medical College, &c. Philadelphia: John Grigg. In 2 vols. 8vo.

(Continued from page 176.)

Causes of Fever.—In the rage now existing among fashionable writers on medicine, to narrow the limits of speculation and inquiry to observations within the dissecting room, the etiology of diseases is much, if not entirely, overlooked. Nay, the existence of all causes which cannot be traced in their operations upon the gastric membranes, has been denied. Among these, malaria has been included, and the very possibility of epidemic influence, independently of sensible causes, acting in conformity to the direction of hypothesis, has been ridiculed. Stubborn facts, and the accumulated observations of successive generations, cannot so easily be put aside, or controverted. There is surely no subject more interesting to the philosophical inquirer, more important to the public health, or more conducive, not only to an enlightened pathology, but also to a judicious and successful practice, than investigations into the nature, extent, and mode of operation of the varying and numerous class of agents which develop diseases. Much research, extended observation, and a curious eye into the operations of nature, are requisite, and it must be allowed that these have not yet been repaid by all the rewards of discovery and knowledge,

so anxiously desired to unfold this department of science. But diligence will have its ultimate reward, and the physician should pride himself in ever remaining a student.

Dr. Eberle divides the "sources of morbid causes" into four classes.

1st. Recrementitious substances, which, in health, are separated and thrown out of the system, but being detained in the circulation, or re-absorbed, become a source of irritation to the sanguiferous system, and, therefore, of irritative fever. These causes are admitted to be always secondary, being the consequences of previous injurious impressions. All those cases of fever induced immediately or remotely by the influence of cold, as by check of perspiration, &c., owe their origin to the agency of this source.

2d. Irritating substances, generated within the body, but wholly independent of any organic actions. They are usually generated in the primæ viæ, as worms, acid and mucous secretions, &c. Our author does not ascribe so great an importance to this class of agents as former writers were wont to do.

3d. Morbific agents, generated out of the body, consisting either of deleterious substances floating in the air, or of the sensible properties of the atmosphere, or, finally, of mechanical causes, viz., miasmata, noxious gases, heat, cold, electricity, humidity, and mechanical injuries.

4th. Contagious, or morbid agents, generated within the body.

In tracing the peculiar effects of each of these agents, Dr. Eberle relates what is most familiarly ascertained in the present stage of medical science. Under the head of miasmata, he pays a just and merited tribute to the labors of Professor JOSEPH M. SMITH, of this city, evinced in his lucid work on the etiology of epidemics. But how comes it that he passes over in silence the subject of *meteoration*, which has been so fully treated of by the same enlightened author? Its importance entitled it to some notice in a systematic work. Its agency was recognised by the father of medicine, and believed to be so powerful as to deserve the name of *τὸ θεῖον*. All accurate observers who succeeded him, have acknowledged its existence, and none after more mature study and reflection, than the immortal Sydenham. It would be difficult to explain the progress of some of the most devastating diseases, such as influenza, and at the very present time, of the Indian and Russian cholera morbus, on any other principle.

Critical days.—We are happy to find Dr. Eberle directing the attention of students in this country to the doctrine, so

nearly, yet so unjustly, exploded, of the crisis of fevers. His observations on this subject deserve serious reflection ; we, therefore, extract them at large.

“It may, I think, be assumed as a safe principle, that doctrines or sentiments, concerning facts which are objects of mere observation and experience, cannot be wholly erroneous or illusory, after having obtained the entire confidence, through a series of more than twenty centuries, of a vast number of as accurate and devoted observers of nature as have ever adorned our profession. Without professing a belief in the correctness of the doctrine of crisis, as it was taught by the ancients, and by many of the moderns, we may yet admit, on good grounds, it is conceived, that there exists a natural tendency in the operations of the animal economy, whether in a state of health or disease, to certain periodical fluctuations, which, under particular circumstances, manifest themselves in a way sufficiently conspicuous to exhibit an obvious revolution in the increase and declension of the morbid actions of the animal system. It was early observed that there are certain regular periods in the course of many febrile affections, at which prominent changes are wont to occur, preceded generally by a manifest aggravation of the symptoms, and followed or attended by certain evacuations. These evacuations, from their being almost always followed by an obvious abatement in the symptoms, were called critical, and were thought to consist of noxious or febrific matters, which were thus thrust out of the system by the sanative powers of nature. Fever was supposed to be nothing else than an effort of nature to prepare and cast out of the system the morbid materials which disturbed the regular actions of the animal economy, and that the amendment which ensued was the immediate consequence of such eliminations of morbid matter. At the present day it is, however, more correctly maintained, that these critical discharges are the effects, and not the causes of the melioration which occur about the periods at which they take place ; and that they are to be viewed rather as the first manifestations of a favourable change in the condition of the system, than as the immediate causes of such a change. That this is the correct view in relation to the nature of such discharges, there can, indeed, exist no doubt ; but this view of the subject does not deprive it of its importance, and directs our attention rather to the periodical exacerbations and inherent tendencies in these maladies to terminate their course at one period in preference to another, than merely to the evacuations which are apt to supervene at such times. In no forms of fever, perhaps, are these tendencies to terminate at a certain fixed period more frequently manifested than in intermittents. There appears in these fevers a septenary revolution, which I have often seen verified in the most unequivocal manner. If an ague of the quotidian type be suffered to run on until it terminates spontaneously, the termination will almost universally occur, if it occurs at all, either after the seventh, fourteenth, or twenty-first paroxysms ; and I have repeatedly found

that febrifuge remedies exhibited immediately after these septenary periods will arrest it with more certainty, and with much less liability to relapse, than when employed during any of the intervening intermissions. From the same inherent tendency, the relapses which are so common in this disease, will, in a vast majority of instances, occur about the septenary periods from the time of the last paroxysm, and most commonly about the eighth or fourteenth, and sometimes for several periods about the twentieth day."

"In order to understand the nature of crisis, every fever must be considered as having a tendency to some one of the principal *types* mentioned above. A simple tertian intermittent may be regarded as the elementary type of fever. In fevers of this type, an exacerbation or paroxysm and a crisis will occur on every odd day; and if we consider a *continued* fever as made up of tertian paroxysms prolonged and running into each other, or as possessing a natural, though countervailed tendency to the elementary or tertian type, there will, in like manner, occur more or less considerable tertian exacerbations, with their accompanying discharges. From what has already been said concerning the manifest septenary movements of intermittents, the tendency of continued fevers to terminate on the fourteenth or twenty-first days, which can scarcely be denied, would seem to be in conformity to an original law of the animal economy under a state of febrile excitement.

The evacuations which usually accompany the crisis of fever are, 1. hæmorrhages; 2. a flow of sweat; 3. an increase or changed character of urine; and 4. diarrhœa. Critical hæmorrhages are generally attended with an increased action of the heart and arteries, and often with a manifest determination to, and congestion in the part from which the discharge occurs. They must be regarded as mere manifestations of a previous change in the system, and hence this kind of critical evacuation cannot be substituted by an artificial abstraction of the blood; since, although blood may be abstracted, the peculiar condition of the action of the solids, which constitutes the actual crisis, or change to a favorable tendency, cannot be thus produced. Crisis, by hæmorrhage, is generally confined to inflammatory fever; or, more correctly speaking, to fevers attended with an increased activity and action of the heart and arteries. Critical hæmorrhages most commonly proceed from the nose, and according to the observations of many of the older writers, are frequently preceded by the *dicrotus* pulse, in which two distinct wave-like beats occur during each diastole of the artery. Immediately before the eruption of the blood, the carotids beat strongly; the face becomes flushed; sparks appear before the eyes; the eyes are red and suffused with tears; and, in some instances, frequent sneezing, and a thin watery discharge from the nostrils, occurs just before the hæmorrhage appears.

Critical sanguineous discharges have also been known to occur from the uterus, the rectum, and sometimes, though very rarely, from the stomach, and even from the external parts.

Crisis, by an increased flow of perspiration, is by no means uncommon. Catarrhal and rheumatic forms of fever are more apt to terminate by this mode of crisis than any other forms of febrile affection. This discharge is not, however, to be regarded as indicative of a favorable change in the malady, unless it be generally diffused over the whole surface, and especially unless it be *attended with a turbid state of the urine*, or a copious sediment in this latter evacuation. The surface should, moreover, be soft, and of a natural temperature—that is, not cold and clammy.

Crisis by *urine*, independent of perspiration, is a very uncommon mode of termination in febrile complaints. A critical urine derives its favourable character not so much from the mere *quantity* of the evacuation, as from its *appearances* and the *materials* with which it is impregnated or mixed. For inspection, the urine which is evacuated at the termination of a paroxysm, or in the morning, ought to be chosen. In a truly critical urine, there may be seen at first a cloud floating in the upper part of the vessel, then a globular body of mucous about the middle, and a sediment at the bottom. So universal is the concurrence of a critical urine, and a general moisture of the skin, that these two evacuations may be considered as essentially connected.

A critical discharge from the bowels is less common than those I have already mentioned. It occurs most frequently in bilious fevers, and in such febrile affections as are attended with some visceral disease within the abdomen. These discharges do not, however, occur as the others do, in the acme or exacerbations of the fever, but during the periods of remission. They are generally very copious. The signs of an approaching crisis by diarrhœa are, a peculiar trembling of the under lip; stammering speech; a full and wave-like pulse; pain and rumbling noise in the bowels; discharge of wind; a moist tongue; itching in the nose; paucity of urine, &c.*

In confirmation of the views here advanced, we would recommend the reader to consult those maintained by the distinguished Jackson, in his valuable treatise on fevers. The ample and scarcely equalled range of experience which was enjoyed by this acute observer and profound thinker, in both hemispheres, during a long and uncommonly active career, entitles his opinions on every subject to great consideration.*

We now come to the treatment of particular fevers, and as we must, of necessity, be very brief, shall select only what we deem peculiarly interesting in the authors before us.

Intermittents.—Dr. Dewees rejects the use of bark altogether, preferring quinine, or rather Wetherill's extract of bark. This is a preparation containing the quinine in the state of a super-sulphate, combined with the whole of the extractive mat-

* Sketch of Febrile Diseases, &c. Vol. I., pp. 190–207. 2d Ed.

ter of the cinchona. "It is more certain in arresting the paroxysms than the sulphate of quinine;" and "the disposition to the recurrence of them seems to be much lessened." [p. 94.] It is prescribed in doses of one grain, in the form of a pill, of which one is given every hour during the apyrexia.

Arsenic is favorably spoken of by both Dr. Eberle and Dr. Dewees. The latter thus mentions its virtues.

"As far as our experience enables us to institute a comparison between it and the bark, we should say, it is fully as certain, and without some of its inconveniences. The only objections that we believe can be urged against it is, that it is a medicine of most deadly power, when improperly used; but when properly exhibited, it is as safe as opium, or any other medicine in daily use. We have never seen the least injury result from it; it sometimes sickens the stomach, and occasionally, even to vomiting; but of what medicine of any power may not the same be said?" Dr. Dewees has, however, witnessed the best effects from this medicine in recent, not very long standing cases, and more successful in young than in old subjects. Neither of these authors make mention of the bold use of this metal, recommended and so safely practised by Dr. Fountain, of this state.

Sulphate of Zinc.—Dr. Eberle gives us the following formula for the use of this article:

℞ Sulphat. Zinci, gr. x.

Pulv. Capsic. annui ʒij.

Conserv. Rosarum q. s. In pilulas No. xl. divid.

"S. One to be taken every two hours during the intermission."

For the removal of the visceral indurations, which frequently remain, after the paroxysms of intermittents have been arrested, Dr. Eberle recommends the muriate of ammonia.

℞ Muriat. Ammon. ʒss.

Pulv. Ext. Glycirrh. ʒi.

Tart. Antim. gr. vi.

Aq. Font. ʒviii.

A table spoonful to be taken every four hours during the day.

Tartar emetic is also recommended in these cases; we have found it useful, combined with sulphate of quinine, in protracted cases, apparently rendered so by inactivity of the skin. Dr. Eberle recommends one grain of tartar emetic, to be dissolved in about three pints of water, and to be used freely as a common drink.

"By continuing this drink, so as to consume at least a quart

in twenty-four hours, for eight or ten days, the skin generally becomes clear, the bowels regular, the cutaneous transpiration natural, and the enlarged spleen, or liver, manifestly diminished in size and hardness." [p. 83.]

In long and obstinate intermittents, to prevent relapses, Dr. Dewees relies mainly on the persevering use of black peppercorns. "Six or eight are swallowed three times a day about fifteen minutes before each meal, and continued for twenty days." An easier method now adopted by the author is to exhibit this article in pills made of *piperine*, one grain to the dose, for adults.

Remittent Fevers.—Emetics are condemned by both our authors. Dr. Eberle gives us the following interesting fact:

"In the year 1822, I attended a considerable number of patients labouring under the milder form of remitting fever. During the early part of the season, I prescribed an emetic in the majority of cases that came under my care. In many of these cases, a great degree of gastric irritability continued to prevail during the first period of the malady, and in the advanced stages much tenderness and tympanitic tumefaction of the abdomen supervened. The disease, in these instances, was wont to run a tedious course—the abdomen became sore to pressure, and the alvine discharges often became watery, reddish, and painful—in short, unequivocal manifestations of high irritation or phlogosis of the intestinal mucous membrane often supervened. Towards the middle period of the season, I left off employing emetics entirely, and, with the exception of one or two brisk cathartics in the commencement, confined myself to the use of the milder laxatives, to keep up the requisite discharges from the bowels. From this time on I met with but few cases in which the former unfavourable symptoms occurred."

Bleeding is much insisted on by Dr. Dewees, and more especially local, by leeches to the epigastrium. Although we do not believe, with this author, that remittent fever is no more nor less than gastro-enteritis, still as this inflammation is very often conjoined with the general disease, we consider the remedy an invaluable auxiliary. We have some doubts as to the invariable benefit derived from it, and concur with Dr. Eberle in the opinion that, "to condemn the use of the lancet universally, would be as erroneous as to enjoin its invariable employment." We are confirmed in our views by Dr. Dewees himself, in the following paragraph.

"As our remittents are very much influenced by causes which we neither see nor have control over, we shall find their force very different, in different years. In our directions for their treatment, which necessarily must be general, we must constantly be understood to mean, that the remedies are to be adapted to the force with

which the disease attacks, the period to which they run, and the particular character they may assume. Thus we find, in some years they are mild, tractable, and of considerable duration; in others they are fierce, rapid, and quickly terminate in health or death. The remedies must therefore be regulated by these modifications."

This view is still further borne out by his remarks in paragraphs 350—355-6.

"If it should be at a season of the year when other diseases be rife, we may learn much by attending to their general character—if this should be inflammatory, the remittents will partake, to a greater or less extent, of this character—on the other hand, should the contrary be their disposition, we must employ less bleeding, or none, and more moderate purging: in a word, a modified treatment will then be required; which we trust can be learned by paying attention to the general doctrine of fever.

"That occult cause, which determines the character of every epidemic, operates by laws, of which we are entirely ignorant; its power is only made known to us by the peculiarities it imposes upon the prevailing disease. These peculiarities are never to be lost sight of. They are of the greatest practical importance; since the neglect or observance of them, will render the treatment either successful or otherwise. And the fact cannot be too early suggested, or too strongly enforced, that there are shades of difference in every disease of an epidemic character, however frequently or seldom it may renew its visitations. This has been well demonstrated in the various returns of the 'yellow fever' in this city; and has been no less evident in the recurrences of the intermittent and remittent fevers, in the neighbourhood of Philadelphia, for the last six or seven years. The last, that is, the one of this fall, (1828,) has, in several very important particulars, differed from every preceding one; and, consequently, required a difference in the mode of treatment."

Now, we put it to the author, whether such caution and reservations are necessary in unequivocal phlegmasia; and if not, whether it is not owing to the intervention of a general condition of the system, which bedside practitioners, no less than mankind in general, recognise as fever, but which physiological physicians denounce as a chimera, the idle creation of visionary ontologists?

The employment of calomel is scarcely alluded to by Dr. Dewees. Dr. Eberle recommends it in strong terms, in combination with nitre and ipecacuanha.

The balsam copaiba is highly recommended by the latter author, in cases of this fever, complicated with sub-acute inflammation of the bowels. Where higher excitement prevails, and there is acute inflammation, active and powerful depletion is

indispensable. Instead of nitre, James' powder should be combined with calomel, provided the stomach will bear it, or, in its stead, the saline effervescing draught.

The use of the sal æratus, or super-carbonate of soda, has been an excellent substitute, in our hands, for all other febrifuge drinks.

Yellow Fever.—There is nothing new advanced by the authors on this terrific malady. Happily, a long exemption from its visitation, in this section of our country, renders this the less surprising. Their views of treatment are such as we believe to be correct, in the main, recommending the energetic employment of anti-phlogistic measures. Yet it cannot be denied, that the form of this disease is much modified by peculiarities of different epidemic seasons, and that the mild plan is successfully practised in many of the French islands, not by physicians only, but even by experienced nurses.

We are somewhat struck by Dr. Eberle's remark, that "in the seasoned and acclimated inhabitants of those regions where the disease is endemic, it is often as mild as bilious fever." If we understand the import of this passage properly, it goes to show that the disease is common to the acclimated, as well as the inacclimated, and frequently mild when it attacks them. Now we had been led, both by observation and reading, to believe that the yellow fever was exclusively a disease of those not acclimated, or, at least, with very few exceptions. We little conceived that these exceptions were ever *frequent*. Dr. Dewees very correctly lays down a broad distinction between this fever and the ordinary bilious fever, to which the seasoned, equally with the unseasoned, are liable. The treatment, too, is laid down with great perspicuity and force by the latter author.

Under the head of *Continued Fever*, we find some admirable remarks, by Dr. Dewees, on the form so improperly called "typhus" in this country.

"We are perfectly persuaded, from long and carefully made observation, that the fever almost universally called typhus, for the most part, is of artificial origin;* and farther, that it is constantly in the power of improper management to convert the most inflammatory fever into this much-dreaded state of the system; and this by the most simple and easy process imaginable. To effect this ter-

* We may with much propriety call the cases, now under consideration, that is, such as have been neglected in the early stage of the disease, "accidental typhus," since we have agreed to retain the term typhus, for the reasons just stated.

rible change, for such it really is, it is only necessary to deplete insufficiently ; or to over stimulate, during the phlogistic state of the system.

“ What we have just advanced, we believe to be most strictly true ; and this convertibility being observed in this disease, though it had an artificial, or contingent cause, it has been mistaken for an inevitable consequence ; to guard against which, means are employed, which only hasten, and make sure, the evil. A dry, dark tongue ; a hot skin ; a flushed face ; a tendency to delirium ; and an irritated pulse, are sure to be called typhus, and are too constantly treated as a disease of absolute weakness. Stimulating and tonic remedies are resorted to, and the system is goaded into gangrene, and the patient into the grave, in the course of a short time.

“ Now, we are of opinion, that the above-named train of symptoms do not constitute a *typhus* fever, in its true meaning, though typhus has all of them as attendant symptoms ; for they will seldom, or never, yield to the stimulant plan of treatment ; while we are told, and perhaps bound to believe, by the greater part of the writers, that *typhus* is sometimes cured by bark, wine, volatile alkali, &c. (See Chap. on Typhus.)

“ Our experience is decidedly against this mode of practice ; for we have not unfrequently, when called upon to prescribe for this artificial disease, witnessed that it would yield, with pretty constant certainty, to a perseverance in the antiphlogistic and temporizing plan of treatment. We have often abstracted blood, both from the general system, as well as topically, when all the symptoms enumerated, and which are supposed to constitute typhus, were present ; and we have witnessed them to change their aspects immediately. For by these means, the dry, dark tongue, we have had, (sometimes in the course of an hour,) a moist, whitish one ; for the dry, hot skin, we have had a cool, moist one ; for the flushed face, we have had a pale one ; delirium has been arrested ; and the irritated pulse has been converted into one of a mild, and open character.

“ One the most dangerous errors in the practice of medicine, is prescribing for the name of the disease, instead of attending to the state of the system—that is, paying a strict attention to the state of the pulse ; the degree and seat of pain ; and the state of skin. For if the pulse be tense and active ; pain acute ; especially if in the head, chest, or region of the stomach ; the skin hot and dry ; the tongue dry ; the teeth encrusted, and the mouth black ; the fingers employed in picking the bed-clothes, or the arms twitching with sub-sultus tendinum, we would not hesitate to abstract blood, in one way or other, be the period of the disease what it may.

“ Nor will this be all ; we would purge as just directed, (page 81,) and observe a rigid antiphlogistic regimen throughout. We would do this, because we could appeal to our experience for the comparative success of the two methods ; for the time was, when we went

with the current ; stimulated as fearlessly as any one ; and lost patients as certainly as any other practitioner. But for the last ten years we have abandoned this mode of treatment ; and by doing so, if we do not deceive ourselves, we have carried patients through, that would, we sincerely believe, have succumbed under the other plan.

“ If, then, we have the misfortune to meet with this artificial disease, we treat it as if there were still a lurking inflammation present in some one of the viscera ; or as if the morbid irritation of the pulse could only be subdued by a sedative, or tranquillizing mode of treatment. That is, by aperient medicine ; the (perhaps) loss of blood ; a mild regimen, and the total abstraction of all stimuli, either in the form of food or medicine, if we except the occasional employment of blisters ; or now and then, perhaps, the use of laudanum. To be successful, therefore, in this state of fever, only requires, that the evacuations should be suited to the condition of the system, for evacuants must be employed.”

We shall also quote, though at some length, the following :

“ Now, the great error in practice lies, in mistaking this state of pulse, for a pulse of debility ; because, it is accompanied by certain changes in the febrile phenomena, which have been too constantly and wrongly associated with a state of debility, and which, it is supposed, requires for its removal, tonics and stimulants. The other symptoms accompanying the state of pulse just described, unfortunately, from mere association, lead to the same conclusion. Such are the dry and loaded, or the dry and polished tongue ; a circumscribed red, or hectic cheek ; confusion of intellect ; a hot, parched skin, and more or less of subsultus tendinum. We would now ask, is there any thing within the range of pathological research, or practical observation, that countenances the belief, or that establishes the fact, that the symptoms above enumerated are proofs of an over-prevailing debility, which can only be removed by tonics and stimulants ?

“ We hesitate not to say, there are no observations, either pathological, or practical, that can lead to such conclusions. On the contrary, we can with the utmost confidence declare, that we have seen all these symptoms vanish, by general or topical bleeding ; by purging ; by a strict antiphlogistic regimen ; by sponging the body ; by cold local applications, and by sudorifics. And, farther, that we have almost invariably seen them aggravated by the tonic and stimulating modes of treatment.

“ There seems to be a species of infatuation upon the subject of typhus, that is no less surprising than mischievous. Surprising, because no adequate cause can be assigned for it ; and mischievous, because it leads to the employment of remedies which are decidedly destructive of human life ; for the apprehension of an event, which in itself is altogether contingent, leads to a practice, that

seems the absolute production of this artificial species of typhus. Thus, the fear of debility, and the supposed inseparable attendant, (typhus,) are attempted to be guarded against, by the administration of remedies altogether unsuited to the nature of the disease; or, rather, to the condition of the system. The nervous and vascular system have now to contend with the force of the remote cause, as well as to bear with the stimulation, which a narrow pathological view has called in requisition.

“The disease in question has an anatomical character, without doubt; and though we do not consent either to Broussais’ or Clutterbuck’s exclusive locations, for this character, (as both are certainly right at times,) yet we are persuaded, that in every instance of this disease, *some one portion of the system has been acted upon in an especial manner by the remote cause*; which will have the effect, perhaps, of modifying the force, and perhaps the succession of phenomena attendant upon the disease, when about to be developed, or after this has fully taken place.

“We cannot well be certain that there is not a phlogistic state of some one portion of the system; and which may be the cause of the irritated pulse, and the other symptoms attendant upon this state of fever; for sometimes we have no other evidence of its existence than the pulse, as there may be no local pain to detect the lurking mischief. In this situation of things, that is, of local inflammation, stimulants would be highly injurious; for they would, with the utmost certainty, increase the mischief they were intended to remove.

“It is therefore always safest to trust to the mildest and most temporizing plan of treatment; by this we give the recuperating powers of the system a chance of doing something in favor of the patient. On this account we pay attention, first, to the state of the alimentary canal; and if this be affected by loose, black, fetid stools, we give mild aperients, until their character change; for it is in vain to attempt the relief of the system, while these stimulating substances occupy the intestines. Second, we pay great regard to the condition of the skin; if this be dry and hot, we cause it to be sponged with cold water, and give the neutral mixture, or the sweet spirit of nitre; if partially cold, we endeavor to establish an equality of temperature, by warm applications. Third, to the state of the lower extremities, and the degree of intellectual sensibility. If the legs are disposed to become cold, and there be delirium or stupor, we apply blisters to the calves of the legs. If there be no unusual tendency to coldness in the limbs, and if the mind be much affected, we have the blister applied between the shoulders and down the spine. Fourth, we attentively watch for the appearance of local inflammations, or determinations. The existence of these are, sometimes, it must be confessed, sufficiently obscure, if no other symptom than pain is to be regarded as evidence of them; but in this we must not be misled; since pain is not the constant attendant upon these conditions, the pulse must be attentively examined. It will be well to bear in mind, that both inflammation and congestion

or engorgement, may happen at any period of the disease, and, when extensive, will very much influence the treatment. For though inflammation may really exist during the whole progress of the disease, or supervene at any period of it, yet its character will, in a great measure, be determined, as it may be initial or secondary. In the first instance, it will bear a greater loss of blood than in the second; and the loss of blood, either directly or indirectly, is absolutely necessary. In the first case, especially in the early part of it, bleeding from the arm may be essential, and which will be clearly indicated by a full, tense pulse; in the second, leeching or cupping the part which is the seat of the local aberration, will be all that may be required, or that the system will bear.

Dysentery.—At the risk of being denounced as incorrigible ontologists, we must assert the belief, that this affection is properly to be classified with general diseases of the system, such as fevers. This has been done by Hosack in his nosology, and entitles him to great praise.—Foderé, in his valuable treatise on epidemic diseases, has the following remarks respecting it.

“Quoique cette maladie paraisse avoir son siege primitif dans les gros intestins, cette idee de siege, qui engagerait a une medecine *a priori*, ne serait pas toujours heureuse, la dysenterie étant quelquefois une maladie de tout le corps : il est plus conforme à l’observation clinique de la considérer sous plusieurs points de vue.”*

Our reasons for considering this affection a disease of the whole system are the following :

1st. Its *causes* are often general, the same with those which produce autumnal and periodical fevers. Contagion is indeed alleged to be one of the most common means of its development and diffusion. Were it so, it would afford a strong presumption in favor of the view we have adopted, for there is no instance of a purely local phlegmasia spreading itself by this medium. But the strongest evidence is on record that dysentery does not possess this property. Dr. Dewees observes, “this disease has been looked upon by many as contagious; we have been very attentive to this question ever since our commencement in business; our opportunities have been ample as well as frequent; but in no one instance have we had reason to believe it to possess this quality; an epidemic disease has been mistaken, we are certain, for a contagious disease, in many of the reputed instances of this complaint having appeared throughout a community.” (Vol. II. p. 569.) Lest it might be urged that this applies to northern climates only, it may be well to remember,

* *Leçons sur les Epidémies, &c.* Par F. Em. Foderé, tome II. p. 77.

that the best writers on the disease, as it appears under its most severe forms in southern and eastern countries, have denied its contagiousness. From some observations of our own, made years since, we are fully convinced, that dysentery of the most violent character is not contagious in the West-Indies. Its causes there are more pervading, depending upon meteoration, atmospheric vicissitudes, diet and miasmatic influences.

2d. Its essential *symptoms* are, especially in its epidemic forms, not confined to mere inflammation of the large intestines, nor is this in general a primitive affection. The most experienced observers have concurred in describing dysentery as commencing with general symptoms of fever which are *followed* at various distances of time by the local inflammation. These general symptoms are indicative of a derangement in the whole system, but more particularly in the hepatic and cutaneous organs, and it is not until this derangement has continued for a greater or lesser period, that the lower intestines which appear to be predisposed by some latent influence to disease, are affected by the symptoms more specifically designated as dysenteric. But inflammation is not the only consequence of the general affection which ushers in the disease: stricture and accumulations in the bowels have often been discovered without inflammation; (Recamier;) and hepatitis is not an unfrequent concomitant. Hence have arisen the numerous hypotheses to explain the varying nature of one and the same disease. With Dr. James Johnson, whose chapter on Dysentery is one of the best ever penned on the subject, we think that the origin of all difficulty in attempts to elucidate the nature of this disease is the mistaking effects for causes. "Thus," says he, "if we do find stricture in any part of the intestinal canal, what produced it? this must evidently be the effect of some cause. *If we find inflammation there, it is proved to be a consequence, and not a cause of dysentery, from the plain fact, that in original and unequivocal inflammation of the bowels, or enteritis, constipation is almost always present.*" And so on with the other concomitants.

3. But *post mortem appearances* do, undoubtedly, betray evidences of preceding inflammation in almost every fatal case of dysentery. Great as is the value to be attached to examinations after death, there is a limit beyond which we cannot rely upon them as indications of previous disease, or as guides to practical conduct.—They discover to us much, but not *all*. They show us the extent of ravage committed before life is extinguished, but the progress and the successive relations of causes and effects, in the destructive process they cannot and

never will develope. A familiar instance of their limited utility, in so far as treatment is concerned, is exhibited in yellow fever. Inflammation and gangrene of the stomach is almost invariably presented to the inspection of those who examine the bodies of patients dying from this affection. Yet the antiphlogistic plan has not, by any means, been successful, in proportion to the glowing anticipations framed upon this discovery. Nor are there any, excepting always your exclusive physiologists, who identify and confound yellow fever with simple gastritis. And why not?—Because there is a general affection independent of the local inflammation, which accompanies the disease, and this will prove fatal from its own unassisted violence, frequently before the latter is at all developed. So with dysentery. The local disorder is a consequent upon the general affection from which it borrows its hue and tone. It aggravates it indeed, and requires most special attention, but it does not form and constitute the essence or entire entity of the disease. Did this admit of doubt, from the remarks already made it would be fully proved.

4thly. By considering the *treatment* proper to be pursued in the disease. If we had a pure uncomplicated inflammation of the bowels with which to contend, our methods of subduing it would be plain and obvious, and if not always successful, would yet be uniform, as in pleurisy, pneumonia, enteritis. This is far from being the case. Assuming, like other epidemic and general affections the most varied forms, in different seasons, dysentery requires the most varied modifications of treatment. And thus it is that such different plans have been recommended on the authority of those who have observed it under different situations and at remote intervals. Bleeding, diaphoretics, mercury, opium, ipecacuanha, nitrous acid, and even bark, have all had their day. They are all useful when judiciously employed either single, or combined. Reliance on any one of them exclusively, at all times, must lead to frequent, if not invariable disappointment.

We will not deny that to moderate the local inflammation is one of the most important indications in dysentery, and hence there is an apparent safety in the hypothesis which we are attempting to subvert. But while we would strongly recommend the most careful and solicitous attention to the inflammation of the bowels whenever urgent, we must still insist upon no less anxiety and watchfulness to be directed to the more important indications presented by the general and primitive features of the disease, as developed in the biliary and cutaneous systems.

If we have indulged somewhat at length upon this subject, it

has been because we deemed it one of importance, and we wished to counteract as far as in us lies, the influence of the two text books before us, in both of which the idea is inculcated, that dysentery is a purely local disease.—On the treatment proposed by them in consequence our opinions may easily be imagined. We are, however, much surprised even under the circumstances of the case, that Dr. Dewees should make no mention whatever of calomel as an adjuvant, if not an essential agent in subduing this disease. The mild forms usually put on by dysentery in the United States render its employment frequently not indispensable. And yet from some considerable experience, we are led to conclude, that there is scarcely any other remedy so important and speedily beneficial as this one. Dr. Eberle recommends it highly, and even admits that scruple doses may be given with impunity—he might have added, with decided benefit.

Dr. Eberle, in recommending bleeding, and very justly at the commencement of the disease, observes that it will “favor the beneficial operation of purgatives, calomel, opium and blistering; remedies upon which our principal reliance must be placed.”—(Page 211. vol. I.)

To calomel and opium no objections can be urged; but purgatives and blisters are decidedly improper. Dr. E. himself adds, that only the milder laxatives should be employed—how then can he suggest purgatives? This may appear verbal criticism, but it must be recollected that Dr. Eberle is no inconsiderable authority on *Materia Medica*, and in his valuable elements of that science he lays a broad distinction between purgatives and laxatives—both being comprised under the head of Cathartics. Such confusion of terms might lead the unreflecting to pursue improper plans of treatment, and therefore we expose it.

Blisters are by the highest authorities considered of no service, and by some even injurious. Dr. Eberle himself prefers fomentations and large emollient poultices, (see page 217,) why then say that our main reliance is to be placed on blisters?

We had intended to examine some other subjects in these two treatises, but our limits forbid at the present time; our general opinion of their merit has already been expressed. P.

ART. II.—*A Treatise on Poisons, in relation to Medical Jurisprudence, Physiology, and the Practice of Physic.* By ROBERT CHRISTISON, M. D., *Professor of Medical Jurisprudence and Police in the University of Edinburgh, &c. &c.* Edinburgh. 8vo. pp. 698.

BESIDES the usual responsibilities of the physician, there are other and important duties which he is not unfrequently called upon to perform, and among these none assume a higher character than that of a witness in medico-legal inquiries. Although no statutory enactments in this country specially enforce the performance of this professional function, still custom has more than sanctioned what necessity so palpably demands. We say, necessity; for no one besides the physician is capable of affording that kind and degree of information which is requisite in cases of sudden death, of mental derangement, and of the various subjects embraced in the science of juridical medicine. The pursuits of a well educated practitioner give him not only the evidence of criminality, by the observation of the symptomatic effects of poisons, and by a tangible demonstration of their presence, but, in the performance of his duty, he is put in possession of that moral proof which no one else may better or even so well obtain. It was from the force of these circumstances, that it entered in the code of Charles the Fifth, as framed in 1532, that the opinion of medical men should be obtained in all cases of sudden death, produced by lethal means; such as wounds, drowning, poisoning, infanticide, &c.

Such being the necessity still, we may naturally inquire whether all, or even a majority, of the profession are so well acquainted with the branches of medicine beyond the ordinary routine of our labors, as to be able to give that decided opinion in courts of justice which will be so generally expected? We cannot hesitate a moment in answering in the negative. Few have that minute anatomical knowledge which gives a familiarity with the visible derangement from healthy structure, produced by violent means,—and fewer still have that nicety of manipulation, or even of chemical information, absolutely requisite in the detection of toxical agents. We say nothing of a general knowledge of the physiology of the action of poisons, or of the symptoms consequent upon the application of criminal violence of any kind; these may enter into the sum of a physician's acquisitions, and yet without the peculiar information and abilities we have mentioned, the enunciation of any *positive* opinion

in a court of justice, can only be esteemed as rash, to use no harsher term. It is an observation of the first medical jurist in this country,—Dr. T. R. Beck,—and it should be well remembered, that “the fact cannot be too decidedly stated, that *a man may be a judicious, correct and excellent practitioner of medicine, and yet not be competent as a witness.*”

The toxicological department of juridical medicine has been but little attended to in this, and, with the exception of France, but little has been effected in foreign countries. Foderé and Orfila were the only authors that could claim the character of systematic toxicologists, until within a very few years. The second volume of Paris' work on medical jurisprudence will entitle him to much respect in regard to this subject, as does also the very able work of Professor T. R. Beck, nearly the whole of one of the volumes of which is devoted to this interesting branch of the science. Besides these, many occasional monographs may be found, all adding to the general stock of information, but not available to the profession in this country, from the limited circulation here of works of this nature. Until the publication of Dr. Beck's volumes, the work of Orfila was the general text book, and we have every reason to believe that only an extremely small number in the profession have any intimacy with the subject of even his labors. It is some years since this work made its appearance, and it is a natural consequence of the rapid strides of chemical investigations, and of a growing attention to the science of medical jurisprudence, that defects and deficiencies should at this day be discovered in his as well as in most of the works on poisons. It is, too, from these investigations, pursued as they have been, with unabated ardor, that modern toxicologists have made so many discoveries of the first importance to the physician. We have thus been made acquainted, not only with the virtues of many antidotes, as simple in their application as convenient in being obtained, but, from the experiments so elaborately prosecuted, many physiological phenomena have also been developed. The science of toxicology has thus unfolded to us the permeability of the living tissues, the powers of absorption possessed by the veins and lymphatics, and other vital actions; it has put us in possession of several important therapeutical agents, and disseminated a more general taste for the acquisition of information on this invaluable branch of our profession.

These are a few of the advantages that have resulted in favor of medical science in general; but the immense importance of these labors must be viewed in connexion with jurisprudence, to be properly appreciated. It is to this point that we shall par-

ticularly direct our attention, in the short analysis we have undertaken.

The first part of Dr. Christison's work is divided into three chapters. The first, *On the Physiological action of Poisons*; the second, *On the Evidence of General Poisoning*; and the third, *On Imaginary, Pretended, and Imputed Poisoning*.

The mode of action of poisons is local and remote. The local effects are manifested in three ways: by chemical decomposition or corrosion of the parts; by irritation without immediate lesion; and by simple nervous impression, without any visible organic change. Of the first we have examples in the effects of concentrated mineral acids or alkalies on the skin, and of strong oxalic acid, lunar caustic and corrosive sublimate on the stomach. Examples of the second, from the most simple to the most severe effects, we find in a variety of agents, such as alcohol, cantharides, tartar emetic, the manchineel apple, arsenic, &c. "Many of these irritants," observes Dr. Christison, "such as arsenic, are in common speech called corrosives; but they have not any power of causing chemical decomposition. If they produce a breach in the texture of an organ, it is merely through the medium of inflammation, and its effects." Our author informs us that few well authenticated instances of the third kind are known. When monkshood is chewed, Mr. Brodie observes, that it leaves a sense of tingling and numbness on the lips, and quite unconnected with any general affection of the nervous system. When the vapor of strong hydrocyanic acid was confined in a glass tube by a finger at each end, it was remarked by M. Robiquet, that the point of each finger became benumbed, and remained so longer than a day. Dr. Christison considers the most unequivocal instance to be the fact mentioned by Wilson Philip. When opium was applied to the inner coat of the intestines of the rabbit, during life, paralysis of the muscular contractions of the viscus ensued, without any immediate effect upon the general system. The same thing was observed by Morgan and Addison to follow upon the application of the ticunas. Dr. Munro, *secundus*, describes an analogous effect to occur with opium, an infusion of which, injected between the skin and muscles of the leg of a frog, soon palsied the limb, while the animal leaped briskly with the other three. M. Coullon has also remarked, that when one hind leg of a frog was plunged into prussic acid, it became paralysed in thirty-five minutes, while the other retained its sensibility and irritability. It is suggested that sugar of lead possesses the same property.

"These facts are important, because some physiologists have

doubted whether there really exist any local impressions of a purely nervous nature, unconnected with organic change, and arising from the action of poisons. Yet the existence of impressions of the kind is necessary to the stability of the doctrine of the sympathetic action of poisons; that is, of the transmission of their influence from organ to organ along the nerves. Nay, in the instance of very many poisons supposed to act in that manner, we must still farther believe in the existence of primary nervous impressions, which are not discoverable by any local sign whatever." p. 3.

As death often follows upon symptoms having no distinct relation to the local injury, hence Dr. Christison remarks, it must be inferred that the fatal effects must have ensued upon injury to some other part, to which the agent is not or cannot be directly applied. These are what are called the *remote* actions of poisons. The best instance of this action, we are informed, is oxalic acid; this, although ranked among the corrosives, "never kills by destroying the function of the stomach." Besides other evidences in favor of this assertion, we have the fact, that "death is most rapid under circumstances in which the stomach is least injured, namely, when the acid is considerably diluted."

There are but two modes in which the remote influence of poisons may be effected. These will at once suggest themselves, and each will have its partisans among the solidists and the humoralists. The last will contend for *absorption*, the other for *sympathy*. Ultraism on either question, however, must be perversely blind to the results of repeated experiments made within the present century for the elucidation of the subject. The schools of exclusive solidism have nearly passed into oblivion. Occasionally, indeed, we meet with a struggling argument, or with a modified theory, from some modern sympathicist; but the day, we trust, is speedily approaching, when the incontrovertible evidence so repeatedly adduced by experimentalists, will have accomplished its reasonable demands upon the common sense of our profession. The spirit of the age, seconded by the labors of impartial physiologists, and an enlightened dependance upon individual observation, is fast dispelling the mist of exclusiveness, and destroying the influence of a shackled attachment to great names and subtle theories. It is in this trust we rely for a final emancipation from mental slavery, in spite of the evidence occasionally afforded of an ultra adherence to the doctrines of *schools*, rather than a wise submission to the force of *truth*.

That we can discover nothing of value in the doctrine of the solidists, would indeed be extraordinary, but we contend against

the obstinate disregard or ingenious evasion of facts, and the subtle casuistry of theorists, which would uphold this doctrine, to the entire exclusion of every thing like absorption in the action of lethal or remedial agents. Dr. Christison, as might be expected from his location, has a strong leaning towards solidism, yet his ingenueness obliges him to concede the fact as irrefragably established, that many poisons pass into the blood, or, in other words, are absorbed. We cannot help smiling at the manner in which he avoids the result of these facts, as if the old idea of absorption, or the modern and rational modifications of the humoral pathology, were a heterodoxy devoutly to be disclaimed. He therefore, qualifies the truth by doubting, *whether any poisons pass with the blood so as to affect the structure of the organ acted on.* We shall come to his remarks presently.

Following the course of Dr. C., we are at once brought to notice his observations on the two modes of conveyance of poisons to parts remote from the primitive local injury ; and first—*of the action of poisons through sympathy.*

It is well known, that all poisons were formerly believed to act through sympathy, and perhaps it is equally familiar to our readers, that the exclusiveness of this opinion has been entirely subverted by Magendie's experiments, which resulted in his discoveries of venous absorption. These results have been substantiated by the subsequent investigations of other physiologists. For ourselves, we do not wish to contend that all poisons enter into the blood, for this would be as much at variance with correct observation as to assert the converse of such an opinion. But, in granting this, we are moved by stronger reasons than mere conjecture, and therefore, cannot come to such conclusions as the following. Dr. Christison gets over the whole argument of absorption, as the question is generally understood, by supposing, notwithstanding this actual mode of conveyance, "that although many poisons do enter the blood, the operation of these, nevertheless, consists of an impression made on the sentient extremities of the nerves, and conveyed thence along their filaments, to the brain or other organs." This is ingenious ; it may be theoretically possible, but, is it absolutely true ?

"The nerves certainly possess the power of conveying from one organ to another, various impressions besides those of the external senses. This is shown by many familiar phenomena, and in reference to the present subject, is aptly illustrated by the remote or sympathetic effects of mechanical injury and natural disease of the stomach. Acute inflammation of the stomach generally proves fa-

tal, long before death can arise from digestion being stopped ; and it is accompanied with symptoms neither attributable to injury of that function, nor belonging to the phenomena of inflammations in other organs. These symptoms, and the rapid death which succeeds them, are vaguely imputed to the general system sympathizing with the affected part ; but it is more probable that one organ only is thus, at least in the first instance, acted on sympathetically, namely, the heart. The effects of mechanical injuries are still more in point. Wounds of the stomach may prove fatal before inflammation can begin ; rupture from over-distension, may cause instant death ; and in either case, without hemorrhage." p. 5.

From the foregoing, Dr. C. observes, that it is impossible to doubt that some organs sympathize with certain impressions made on others at a distance, and that these impressions cannot be conceived to occur by any other means than along the nerves. The *conclusions* of the author are certainly incontestible, but, only as applicable to particular, not general poisons.

Besides the evidence of the sympathetic action of poisons upon organs other than those to which they are applied with manifest injury, there is another mode to be considered. May distant organs sympathize with those peculiar local impressions called nervous,—“ which are not accompanied with any visible derangement of structure?”

The existence of such a mode of action, Dr. Christison conceives to be clearly established from the rapidity of the effects of some poisons. Among these are mentioned the essential oil of bitteralmonds, pure prussic acid, strychnine and alcohol. The actions of other poisons are produced more slowly, and do not prevent us from believing that their consequences result from absorption.

We are brought, secondly, to notice the *action of poisons through absorption*. The principal arguments in favor of this mode of conveyance are those which have been frequently adverted to by writers. They are based upon the facts, that poisons disappear during life from the shut cavities in which they have been enclosed ;—that the action of many poisons is unimpaired when the parts to which they are applied are deprived of their nervous connexions ;—that many poisons will not act when they are applied to a part of which the circulation has been arrested, its other connexions with the body being uninjured ; that some poisons act in proportion to the absorbing power of the part to which they are applied ; and lastly, we have a most interesting and forcible argument in the effects of the extract of *nux vomica* when thrust into the paw of an animal after the venous circulation of the leg has been stopped by a ligature, without at the same time impeding the arterial circula-

tion. If, under these circumstances, blood be drawn from a vein between the orifice and the ligature, and transferred into the vein of another animal, the usual effects of the poison will follow so as to produce death ; and on the contrary, the animal from which the blood has been drawn will not be in the least affected, if a sufficient quantity is withdrawn before the removal of the ligature. These facts are proved from the experiments of M. Vernière, related in the *Journal des Progrès des Sciences Med.* 1827.

What would seem to be a rational conclusion from the experiment of the French physiologist, is however attempted to be controverted by a sort of negative argument. This is adduced by Messrs. Morgan and Addison, who made the following test to prove, that although the poison enters into the venous circulation as shown by Vernière, still there is no evidence that the arterial blood is affected. If, say they, the carotid and jugular vein of one dog be divided, and both ends of which be connected by tubes with the same vessels of another dog, the nux vomica introduced into the wounded paw of one of them, while it it produces its usual effects on this, does not affect the other animal. This, it is said, proves that the poison is not conveyed with the blood to the organ acted on. Now let us examine why this proof may be doubted ; and for this purpose, our readers will follow the course of circulation as artificially produced by this experiment. It is granted, in the first place, that the poison actually enters into the veins ; from these branches it is carried into the jugular, thence it passes through the connecting tube into the reciprocal vessel of the second animal, is carried to the heart, through the lungs, and is returned with the arterial blood to the carotid. From this it passes through the second tube to the carotid of the first dog ; being thus brought back to the animal in which the absorption commenced, it takes its course with the arterial blood, and it is thus distributed through the brain, and, pervading this organ, produces its deadly effects. But it may be said, that some of the arterial blood of the second dog, as it passes through the *uninjured* carotid, must contain a portion of the poison, if our explanation be true. To give a reason why this would not be so much the case as at first sight it would appear to be, we have only to ask, in the first place, whether it would not be the fact, that some portion of the poison passes by venous branches, unconnected with the divided vessel ; for instance, if the external jugular be alone divided, then we have the facial and temporal veins entering the internal ; and again, if it be the latter, then there can be no doubt of the same fact as respects other branches. Again, we may inquire what influence

the irritation of the wound may have in diverting a greater determination of blood to the severed vessel, and thence passing through the tube to the first animal, and thus lessening the quantity of blood, and of course the proportion of poison, passing through the uninjured carotid to the brain of the second. From both of these circumstances, we should expect that the animal into whose system the absorption commenced, would show the usual effects of the poison, while the other would suffer but slightly, if at all. In the first cause we would place much confidence—the second is only a probability, to which, consequently, we cannot so certainly refer. The experiment, in our opinion, proves nothing more than the one made by Vernière, namely, that the brain is the organ acted on by nux vomica, and that this poison is taken up by absorption. But we cannot assent to the author's assertion, that it is an evidence, also, that the poison is not carried through the circulation to the cerebrum, and hence, with him, deduce as an argument against complete absorption and final action by this mode, that, though the poison enter into the venous circulation, still, it is not proved that, *as such*, it is carried along with the blood to the organ acted on.

The positive evidence of the same experimentalists is of a somewhat different character. For example, it is said that if the jugular vein of a dog tied by two temporary ligatures, be divided between them, and then re-connected by a tube which contains woorara—upon removing both ligatures, the poison begins to act. But, say they, it will act with the same rapidity, if the ligature farthest from the heart be only divided. If these experiments may be relied on, they would, of course, only go to prove that there is no necessity for woorara to be carried with the *blood* to the brain, if this be the organ acted on. This result, however, is entirely contradicted by Brodie's experiments with the same poison, as related in the *Philosophical Magazine for June, 1811*. Here the sciatic nerve of a rabbit was laid bare, and the woorara was introduced into the wound. The upper part of the limb was moderately confined by a ligature. No effect ensued, although any communication by the great nerve might have followed, had the action of the poison been by nervous conveyance. The ligature was afterwards tightened, and a new application of the woorara was made. The animal was still unaffected, and then the ligature was removed—twenty minutes afterwards, insensibility and loss of motion showed the influence of the poison. Having this experiment for reference, we are yet to be convinced of the correctness of Messrs. Morgan and Addison's conclusions. Their tests evince much ingenuity, but we should like to hear of their repetition by impartial experimentalists.

The gentlemen just mentioned, in the prosecution of their investigations, have formed a theory to account for many undeniable facts connected with absorption ; it is the most modern modification of the doctrine of action through sympathy. Premising that the sympathetic action of *some* poisons is well established, they conceive it to be contrary to the established law of nature to accomplish the same object by different means, and therefore, that the doctrine of absorption and conveyance of poisons *as such*, is unnecessary, and to contend for it, they suppose to be irrational.

Now, in the first place, we know very little, if any thing, of what are called the laws of nature. The word law, should be understood to mean nothing more than a series of phenomena or visible effects—we cannot consider it as synonymous with cause or necessity, for such qualities of natural action are inscrutable to us. We know that certain functions are performed, but of the *quo modo* we really know but very little. It is from a false comprehension of this term in physiology, that men have been led to make an inference, by which they affirm, of “established laws of nature,” as if such laws were palpable and available for argument as known existences, and they talk of an inconvertible causation, as though they possessed a knowledge of all its qualities. We would not be understood as intending to say that these phenomena are poised upon a possibility of being, or of not being, which chance or accident may bring into existence. We by no means believe this—we acknowledge one “Great First Cause.” Our intention is to give a definite meaning to a term, and thus correct a common error of assuming a knowledge of laws, which, from our present limited capacities, we cannot hope to comprehend. In the present case, the premises of a theory are taken upon this assumed ground ; but if we confine ourselves to what we actually do know, we will find that it may be just as rational to suppose that *different* poisons should have *different* modes of conveyance, although their final effects be *similar*, as that there should be only a *single* mode of conveyance, where the agents are *different*. Messrs. Morgan and Addison grant that some poisons pass into the blood, while others, it must be conceded, produce a sympathetic impression upon the nerves, independently of this medium. Here there is a dissimilarity of primary action ; but then, say they, the final mode of impression should be the same, and therefore, it is supposed that the inner surface of the vascular system is supplied with an expansion of nervous filaments upon which the sympathetic impression is conveyed to the brain. This supposition is necessary to make their theory harmonize with their presumed economy of nature. But even

here their premises fail, for their established laws of nature at once show a mutability, by accomplishing what they ought not to do—the same end by different means; in the first, by primary absorption, and then sympathetic action; in the second, by immediate sympathetic action, without absorption.

These nervous filaments are also used to account for the continuance of the action of poisons, where, as shown by Magendie, the part poisoned communicates with the trunk by blood vessels only. This conjecture requires the same nervous expansion, for the production of like influences in all cases. We ought therefore, to find the same filaments in wounds and in every texture of the body to which these agents may be perniciously applied. The evidence, too, of a superior fitness of these filaments over the sentient extremities of the nerves elsewhere, is much wanting to complete the probability of this modified theory. If this proof cannot be adduced, then the laws of nature are again in the predicament of accomplishing the conveyance of poisons, by sympathetic impression indeed, but, by two means, the sentient extremities of nerves in some parts of the body, and the expansion of nervous filaments in the vascular system. Dr. Christison here observes, that,

“At all events, it is plain that neither the theory of these experimentalists, nor the modification of it now laid down, nor the valuable facts on which both are founded, contradict the general principle, that the bibulous veins, as the organs of absorption, perform a very material part in the operation of poisons. It remains indisputably established, that at least many poisons enter the blood, *although it is doubtful or improbable that any pass with the blood to pervade the structure of the organ acted on.*” p. 13.

At this clause we have already hinted, and we have here italicised it, that it may be better noted. Why is it doubtful? Let us first take the following extract, before making any remarks on the question.

“Now, certain poisons, after being swallowed, have been detected in the blood, secretions and excretions. *M. Grogner*, of the Veterinary School, at Lyons, found sal ammoniac in the serum of horses poisoned with it. *Gmelin* and *Tiedemann* discovered verdigris and sugar of lead in the blood of the veins in similar circumstances. *Lebküchner* also found camphor in the blood of the vena cava. In animals poisoned with the hydro-cyanate of potass, *Meyer* detected it, not only in the blood, but likewise in the serous secretions, and in various soft solids. *M. Jourda* and others, have discovered mercury in the urine of persons who were taking it medicinally. *Dr. Cantu*, of Turin, has detected iodine, in the form of hydriodate, in the blood, sweat, urine, saliva, and milk, of patients

who were using it in medicinal doses. *Krimer* has detected hydrocyanic acid in the blood of animals poisoned with it. The spirituous odor of the breath in men and animals under the influence of alcohol, is a proof of the presence of that poison throughout the blood; and it has also been discovered after death, by the smell in the blood of the heart, and even in the brain." p. 14.

After these proofs, we find it difficult to bring ourselves to any other conclusion, than that which must naturally arise in the minds of most men. If the odor of the breath of men or animals, under the influence of alcohol, be a proof of the presence of that poison throughout the blood; and if this same poison has been discovered after death, by the smell in the blood in the heart and brain, we would then inquire, where is the doubt or improbability that it does pervade the structure of the organ acted on? What or where is the apparatus through which the odor is strained, and the equally impalable poisonous essence is retained? "It is not an uncommon thing," says Dr. Christison, at p. 680, "to find great congestion, and even actual extravasation of blood," in the brain of persons who have died from the long continued use of this poison. Here we have the results of just such *local* effects as we know would ensue from the irritation of alcohol upon the skin, and also upon the membranes of the stomach; for if such irritation as is evident from the external application, be as long continued as may be supposed to be the internal application to the brains of habitual drunkards, then we should have this congestion and extravasation upon the skin, &c. From this we may safely infer, that the poison does actually pervade the structure of the brain, and thus produce the effects demonstrated by dissection.

But these may be said to be the results only of the long repeated use of alcohol. But, judging from the symptoms of persons who have suddenly died from swallowing enormous potations at a single draught, this objection cannot avail much, for here we find the same evidence of cerebral congestion. This result, and the sudden death, it may again be replied, does not occur from the local application of the poison to the brain, but from the sudden paralysis of the powers of the stomach by a powerful stimulus, and the violent sympathetic impression made upon the heart, and that hence arises the congestion. To this, we reply, that in these cases, there are also evidences of the rapid absorption of the alcohol; for Dr. C. makes the spirituous odor of the breath a symptom of poisoning, with this toxic agent, and this symptom, it will be recollected, he places among the proof of *poisons passing into the blood*. More conclusive, however, is the case adverted to by our author, where even ex-

travasation was found in the brain of a man who suddenly died from drinking a quart of brandy at a draught. From these circumstances, then, may we not conclude, that any doubt resting on the question of the pervasion of an organ by poisons, can only be the result of a struggling adherence to theory, rather than the improbability of the fact itself?

The second section, brings us to *the causes which modify the actions of poisons*; these are, quantity, state of aggregation, state of chemical combination, mixture, differences in tissue, differences in organ, habit and idiosyncrasy.

1. *Quantity.* The effects of poisons are more rapidly produced by large doses, and often the kind of action is altered. As for instance, arsenic and oxalic acid; in small doses, the white hellebore excites inflammation of the stomach and bowels; in larger doses, an affection of the brain; both may produce death.

2. *Aggregation.* The energy of poisons is increased in proportion to the minuteness of their division, and therefore, solutions act most energetically. This last effect is produced in two ways—by diffusion over a large surface, and by *affording a facility of absorption to the bibulous vessels*. Morphia may be given, without injury, to a dog, in a dose, which, if dissolved in alcohol or oil, would soon kill several.

3. *Chemical combination.* This cause of modification is, in some cases, a variety of the last; for instance, if the combination increases the solubility of the poison, it then also increases its activity. The energy of morphia becomes more active by a union with acids. The following axioms have a general application. First. "*Poisons, which only act locally, have their action much impaired, or even neutralized in their chemical combinations.*" Second. "*The action of poisons which operate by entering the blood, although it may be somewhat lessened, cannot be destroyed or altered, in its chemical combinations.*"

4. *Mixture.* This depends something upon the poisons being diluted; and also, in part, on the mere mechanical impediment thrown between the poison and the animal membranes. In both cases, the activity of the poison is commonly lessened. "It is important to keep in view, that the effects of mixture may be produced, in consequence of the cavity into which a pure poison is introduced, being, at the time, filled with contents."

5. *Difference of tissue.* This cause bears particularly upon physiology rather than upon juridical medicine. Corrosives and irritants are not so much affected by the difference of tissues, as by the organ of which these form a part. Those poisons, however, which act by absorption, must evidently have

their energy affected in proportion to the activity of the absorbing powers of each tissue.

The *cutaneous* absorption being slow from the nature of the dermoid tissue, many active poisons accordingly act quite inertly, when applied externally. On the *mucous* membrane of the stomach and intestines, poisons act much more energetically than on the skin. The *serous* membranes possessing, generally, an increased activity of absorption, we therefore find that many poisons act through the peritoneum with much more energy than through the stomach. As in a *wound*, the veins are much more exposed, we consequently find, that rapid death is produced by some poisons, which act but slowly through the stomach. This mode of applying poisons is scarcely less direct than if introduced in a vein by injection. The power of the *cellular* tissue as a medium of absorption, has not yet been sufficiently well ascertained. Poisons act with unsurpassed rapidity on the *mucous membrane* of the air-cells of the lungs. The instant effect of the inspiration of noxious gases is in point. This is plainly owing to the delicacy and extensive surface of the membranes. "As to the *nervous* tissue, it is a singular fact," observes Dr. C., "and well worthy of mention, that the poisons which unquestionably act on the sentient extremities of the nerves, and indirectly through the nerves on the brain and spine, do not act at all on the cut surface of the brain and nerves, or upon any part of the course of the latter. This has been proved with respect to hydrocyanic acid, opium, strychnia, and all active narcotics."

6. *Difference of organ.* This cause is partly attributable to the difference of tissues. That it is not altogether a cause, is evident, for the difference will generally be found to be connected with danger, in proportion to the importance of the organ acted on.

7. *Habit and Idiosyncrasy.* These should be particularly studied in a medico-legal point of view, for one man may be poisoned by a substance generally harmless, and another not injured by a substance generally poisonous. *Idiosyncrasy* has a tendency to increase the activity of poisons; *habit*, on the contrary, when it does affect their energy, generally lessens it. The esculent mushrooms, for instance, act upon some persons in nearly the same way as the poisonous kinds. Some fish, too, affect idiosyncrasies, where ordinarily, they are perfectly harmless. Opium eating is sufficient proof of the effect of habit.

The foregoing remarks have their peculiar application in the *treatment of poisoning*. In internal poisoning, the great object of the physician is, to administer an antidote or counter-poisons. These are of two kinds; the one "takes away the deleterious

qualities of the poison before it comes within its sphere of action, by altering its chemical nature. The other controls its pernicious action after it has begun, by exciting a contrary action in the system." In the instance of external poisoning, the chief object is, to prevent the substance from entering the blood, or to remove it from the local vessels into which it has already entered. This has been recommended to be done by three methods. The first is, the application of cupping-glasses, a practice revived by Dr. Barry;—the second is, the application of a ligature between the injured part and the trunk, so as to cut off the circulation of the poison;—the third is, a combination of the ligature and venesection, advised by Vernière. The practical remarks of the author are brief, but useful; but our limits admonish us to pass on without particularly noticing them.

CHAPTER II. *On the Evidence of General Poisoning.* This is connected entirely with jurisprudence. It comprehends an account of the variety of evidence by which the medical jurist is enabled to pronounce whether poisoning in a general sense, is impossible, improbable, possible, probable, or certain. It likewise leads us to infer a suspicion of such poisons. This evidence is derived from five sources, each of which we shall notice.

Section 1. Evidence from symptoms.—The chief characteristics ascribed to these, are: 1. *The suddenness of their appearance, and rapidly fatal termination.* The most violent poisons may be made to act so as to produce their peculiar effects slowly; this we see familiarly illustrated in a variety of substances used for medical purposes. Arsenic, corrosive sublimate, digitalis, strychnia, &c., may be caused thus to act. The character, therefore, of those which may act instantaneously, and lead to a fatal termination, within even an hour, is not uniform. The circumstance, however, should be kept in view, that the effect of these and other poisons, for the most part, begins suddenly, when the dose is larger. This observation is important; for when we consider that poisons are generally administered in large quantities, where the intent is criminal, "it follows that if the effects ascribed to these poisons in such doses, have not begun suddenly, the suspicion is probably incorrect." This holds good also, in regard to the sudden termination of the symptoms, for, in reference to the usual unnecessary quantity given, the effects prove rapidly fatal. Yet this is not always the case; for it is shown in another part of Dr. Christison's work, that the disease produced by poisons, has been prolonged for weeks and months, nay, says the author, "a person may be carried off by a malady, the seeds of which have been sown by the operation of poison, years before."

The criminal laws have special enactments in reference to this important evidence. By the English law, death must take place within a year. From the decision of Baron Hume, it would appear, however, that in Scotland, the charge of poisoning is relevant; although the person may die at an indefinite period, the pains of the law will follow, provided the operation of the poison can be distinctly traced, unmodified by extraneous circumstances.

2. *Regularity in the increase of the symptoms.* This cannot be universal, for a remission of symptoms will be concurrent with the intervals of repetition in slow poisoning. Again, in endeavoring to remove the effects by remedies, remissions may thus be produced, and the regularity consequently be counteracted. Poisons themselves, observes Dr. C., also vary in their action; thus, it often happens with arsenic in large doses, that after the first five or six hours, the symptoms remit, and then return with violence. Nux vomica, and the plants that contain strychnia, produce violent symptoms in frequent paroxysms. This, says Dr. C., is the very essence of their action. On the whole, however, it may be established, that the symptoms of poisoning are steady in their progress; this should be remembered as one of the general characters. Even in slow poisoning, the very exacerbations and remissions, when connected with certain moral proofs, may give the best possible evidence. "Thus, on the trial of Miss Blandy, at Oxford, in 1752, for the murder of her father, one of the strongest circumstances in proof was, that repeatedly after she gave the deceased a bowl of gruel suspected to be poisoned, his illness was much *increased in violence.*" On the question of a complete intermission of symptoms, a satisfactory answer cannot be made.

3. *Uniformity in the nature of the symptoms* throughout their whole progress. This is the least invariable of all the characteristics. Arsenic may, at first, cause inflammation of the stomach or bowels, and afterwards palsy or epilepsy; and nux vomica may produce tetanus at first, and then inflammation of the stomach and bowels.

4. *The symptoms beginning soon after food, drink or medicine has been taken.* Unless the poison acts rapidly, we cannot depend much upon this circumstance. It is a good general rule, however, that if the symptoms are violent from the beginning, they must have begun soon after food, drink or medicine has been taken. This has reference particularly to the common poisons, such as arsenic, corrosive sublimate, the mineral acids, oxalic acid, &c. In making our inquiries, we should remember that poisons may be introduced in the system by the anus; by

the vagina; by inhalation; and, without much difficulty, by wounds.

5. *The symptoms appearing during a state of perfect health.* This is an important, but **not** a universal character. It cannot apply to slow poisoning, nor to the administration of poisons, while the person is actually laboring under natural disease. This last is an embarrassing case, for a poison may be given whose symptoms resemble the natural disease.

The foregoing will show that the characteristics of general poisoning are by no means universally applicable. We will now see how far these symptoms are distinguishable from those of natural disease. We can do nothing more than **sketch** some of these.

1. *The suddenness of invasion, and rapidity of progress.* Many natural diseases possess this character, unsurpassed in degree by any poison. The cholera, of which we have heard so much lately, the plague, acute gastritis, enteritis, many organic diseases of the heart, apoplexy, and a few other diseases, may all make their attack suddenly, and terminate fatally, sooner or later, within from a few hours to a day or two. M. Louis describes an inflammation of the intestines that may remain quite latent till the gut is perforated by ulceration, and then the patient is attacked with pain, vomiting, and mortal faintness, and frequently perishes in twenty-four hours.

2. *Uninterrupted increase of the symptoms.* Apoplexy, cholera, and most of the internal phlegmasiæ, frequently continue after their commencement, **without** any considerable remission. The same may be said of most acute diseases, when they prove rapidly fatal.

3. *Uniformity in the nature of the symptoms.* This kind of action is by no means invariable; neither is it distinctive, for many natural diseases have great uniformity. The absence of this characteristic may afford a positive proof, in favor of natural death, but its presence can scarcely ever add any weight to the evidence in favor of death by poison. The negative proof may be afforded in this way; changes in the symptoms of a certain kind, may be incompatible with the known effects of certain poisons, or of all poisons, and only to be accounted for on the supposition of natural disease having been at last the ultimate cause of death.

4. *The symptoms appearing very soon after every meal.* Some natural diseases resume their attacks in this way. Apoplexy not unfrequently occurs after a full meal; cholera often follows upon repletion; dysentery or violent cholic may take place in the same way, and every body knows that chronic af-

sections of the stomach, are more particularly severe in their symptoms, or are never painful, except after eating. Mere excessive distension of the stomach by a meal, sometimes proves suddenly or instantaneously fatal. Cold water cases are familiar.

Although we thus see that the occurrence of violent symptoms, after taking food or drink, may arise independently of the administration of poisons; still, as these are few in number, and of a peculiar kind, "it is always justly reckoned," says Dr. Christison, "a suspicious circumstance; and when combined with certain points of moral proof, such as that of several people, who have eaten together, being seized about the same time with the same kind of symptoms, the evidence of general poisoning becomes very strong indeed." If, on the contrary, the attack does not commence soon after food, drink or medicine has been taken, (there being no possibility of poison being introduced by a wound, inhalation, or by any other channel than the stomach,) the presumption then is against poisoning. The principle here laid down, may be a very important one, in the practice of medical jurisprudence. Thus, says the author, when united with a little knowledge of symptoms antecedent to death, the nature of the case may be sufficient to show, that poison could not have been administered. This opinion is illustrated by the sudden death of the Crown Prince of Sweden, who fell from his horse and expired within an half hour. This criterion under consideration, may be sufficient to form a just conclusion, without analysis, as will be seen by the following example.

"A middle aged man, who had long enjoyed excellent health, one afternoon, about two o'clock, returned home tired, and after being well beaten by his wife, went to bed. At a quarter past two, one of his workmen found him gaping, rolling his eyes, and quite insensible, and he died in a few minutes. As his wife had often maltreated and threatened him, a suspicion arose, that he had died of poison, and the body was, in consequence, examined judicially by Mr. Newbigging and myself. The only appearance of disease we could detect, was a considerable tuberculation of the septum cordis, and anterior parietes of both ventricles. This disease might have been the cause of death; for there is no disease of the heart which may not remain long latent, and prove fatal suddenly. But, as the man never had a symptom referable to disease of the heart, it was impossible to infer, in the face of suspicions of poisoning, that it must have been the cause of death; since the man might very well have died of poison, the disease of the heart continuing latent. Poisoning, however, was out of the question. The man had taken nothing whatever, after breakfasting about nine. Now no poison, but one of the most active narcotics, in a large dose,

could cause death so rapidly as in this case, and the operation of such a poison, in such a dose, could not be suspended so long as from nine till two. An analysis was, therefore, unnecessary." p. 41.

5. *The symptoms beginning while the body is in a state of perfect health.* All acute diseases commence under circumstances similar to these ; and, therefore, little need be said on this characteristic. There is this difference, however, with regard to inflammations, that they very rarely begin without some referable cause ; this may be of some use in distinguishing these from the actions of poisons.

"On considering all that has now been said regarding the characteristics of the symptoms of general poisoning, as contrasted with those of natural disease, no one can hesitate to allow, that from them alone a medical jurist can never be entitled to pronounce that poisoning was certain. At the same time, he must not, on that account, neglect them. For, in the first place, they are of value as generally giving him the first hints of the cause of mischief, and so leading him to search, in time, for further evidence. Next, they will often enable him to say that poisoning was possible, probable, or highly probable ; which, when the moral evidence is very strong, may be quite enough to decide the case. Thirdly, although they can never enable him to say that poisoning was certain, they will sometimes entitle him to say, on the contrary, that it was impossible. And, to conclude, when the chemical or moral evidence proves that poison was given, the character of the symptoms may be necessary to determine whether it was the cause of death.

"As the last statement is one of some consequence, and has been overlooked by authors on medical jurisprudence in this country, I shall illustrate it by one or two comments. It does not follow, because a poison has been given, that it is the cause of death ; and therefore in every medico-legal inquiry, the cause of the first symptoms, and the cause of death, should be made two distinct questions. The question, whether a poison, proved to have been administered, was the cause of death, is to be answered by attending to the second and third characteristics mentioned above, and considering whether the symptoms went on progressively increasing, or altered their nature during the patient's illness, and whether the alteration, if any, was such as may occur in the case of poisoning generally, or of the special poison given. These remarks are very well exemplified by a case, of which I have related the particulars elsewhere,* that namely of *Charles Munn*, tried at the Inverary Spring Circuit of 1824, for the double crime of procuring abortion, and of murder by poisoning. The moral evidence and symptoms together, left no doubt that arsenic had been given,

*Edinburgh Medico-Chirurgical Transactions, vol. ii. 309.

and that the deceased, a girl with whom the prisoner cohabited, labored under the effects of that poison in a very aggravated and complex form for twelve days. After that she began to recover rapidly, and in the course of a fortnight more, was free of every symptom, except weakness, and pains in the hands and feet. In short, all things considered, she was thought to be out of danger. But she then became affected with headach and sleeplessness, and died in nineteen days more, under symptoms of obscure general fever, without any local inflammation. As neither Dr. Duncan, junior, nor myself, who were consulted by the Crown, had met with a parallel instance among the immense number of cases to be found in authors, we gave it as our opinion, that, granting the girl's first illness, as appeared from moral medical evidence, was owing to arsenic, her death could not be ascribed to it with any certainty."—p. 42.

Section II.—*Of the evidence from morbid appearances.* These were formerly strongly insisted on; but with the exception of a few poisons, morbid appearances alone can never distinguish death by poison from the effects of natural disease, or from some other kinds of violent death. Unusual blackness or lividity was much relied on as an indication of death from poisoning, but this we all know is entitled to no dependence, either in kind or degree. It is worthy, however, of attention, as collateral evidence. Early putrefaction has also been insisted on; but this, says Dr. C., cannot even justify suspicion. Arsenic will produce, in some cases, an entirely reverse effect.

The morbid appearances which are really discovered are mostly those signs common to death from natural disease, but determined in different parts by the different local actions of poisons. In one great class they show an evidence of inflammation in the alimentary canal; in another class, the signs of congestion in the head; and in a third, a combination of both of these. Besides, neither set of appearances is invariably caused by the poisons ordinarily producing them. Congestion in the head is seldom produced by those which are generally imagined to cause it, and most of the evidences of both kinds are, as we have said, exactly similar to those left by natural disease.

From the foregoing, the necessity will at once be perceived, of making minute and extended researches in autopsic examinations, when suspicion has been excited, and to be cautious in making up an opinion from the first striking observation, and thus to be carried away from a careful inspection of the rest of the body.

Section III.—*Evidence from chemical analysis.* This is the most decisive of all proof. The degree of validity reposes

upon the detection of the poison. First, when it is found in the stomach, intestines or gullet; second, in the matter vomited; next, in articles of food, drink or medicines, of which the person has partaken; and, lastly, in any articles of food found in the prisoner's possession, and for which he cannot account satisfactorily.

The poison being detected, still there are two cases in which some corroboration is required. The *first* is, whether the poison was introduced into the body before or after death. Ingenuity may be practised by introducing the substance into the stomach or anus of the dead body. No authentic cases are to be found, but still the thing is not impossible. The *second* is, whether the poison detected is actually the cause of death; the question at issue not being whether it was given, but as to its fatal effects. This has been hinted at before, in the case of Munn. The author here mentions two striking instances; the first is where a girl was severely whipped by her father for stealing: she died while under the beating. From examination of the injuries, Dr. Wildeburg was not satisfied that these were sufficient for the death. He, therefore, inspected the cavities, and found in the stomach a substance which proved to be arsenic. It was then discovered that, in anticipation of the chastisement, the girl had taken the poison; she had vomited, and died in slight convulsions. The other is the case of a woman who lived on bad terms with her husband. She went to bed, and a short time afterwards she was discovered breathing hard; a wound was discovered in the left side of the breast. The hemorrhage was slight, and was checked, but she died towards morning. The wound pierced into the chest and penetrated the pericardium, but did not wound the heart; hardly any blood was effused into the chest. Pyl was satisfied that the woman did not die of the wound; and further examination discovered that she had died of poison. There were signs of corrosion about the mouth and throat, and of irritation of the stomach, and the evidence was conclusive from finding some nitric acid in a glass in her room.

Although these cases have been before related, still we have noticed them here, to show the necessity of discrimination and strict investigation in medico-legal inquiries. Dr. C. observes of them, "I am almost certain that their real nature would not have been discovered in this country." (Great Britain.) And we are equally certain that from the manner in which inquests are held, it could only have been a miracle or an accident that would have led to the truth in our country.

There is another point to be examined, which relates to the causes which may remove the poison beyond the reach of the inspector. Although poison be not detected in the body, still this fact must not give the conclusion that poison has not been the cause of death. It may have been all discharged by vomiting and purging, or it may have been all absorbed, or decomposed.

The subject becomes more interesting as we advance to the conclusion of the remarks on the evidence of general poisoning, and as this interest is increased, we find ourselves unable to do justice to the work or to our readers, by attempting to compress that in a summary analysis, which should be carefully read without destroying the original arrangement. This would only be impairing the validity of the conclusions, by depriving Dr. Christison of the force of his facts and arguments. Still, to bring ourselves to the end of this *first* (and very important) *part* of the work, we shall so hasten over the remaining sections, as at least to give our readers some idea of their import. We have said that when poisons have been received into the stomach, yet they may escape detection from two or three causes.

1. *By vomiting and purging.*—Several authentic cases are noticed, where it was proved that arsenic had been taken, and still none could be found by analysis. Yet it is singular how ineffectual vomiting sometimes proves in expelling poisons from the stomach. Persons have incessantly vomited from two to forty-eight hours; and, notwithstanding, quantities of the substance taken have been found in the stomach. Metzger has related a case where, under these circumstances, three drachms of arsenic were found in this organ after death. The period of disappearance must vary with the solubility and division of the poison, the frequency of vomiting, the substances taken as remedies, and the like, and a variety of circumstances which it is scarcely possible to appreciate.

2. *By absorption.*—Solid opium and laudanum have escaped detection when they have produced death. We shall, under this head, only give the following case: “A young man one evening called his fellow lodger to his bedside, assured him he had taken laudanum, and should be dead by the morrow; and desired him to carry his last farewell to his mother and his mistress. His companion thought he was shamming, but next morning the unfortunate youth was found in the agonies of death. The moral evidence was not very satisfactory, but that is of little consequence to my present object. The point in the case I would particularly refer to, is the declaration of the medical inspector, that laudanum *could not* have been taken, because

he did not find any by the smell, or by chemical analysis, in the contents of the stomach."

Numerous errors have occurred from neglecting the effect of absorption; and medical witnesses, as in the above case, have given opinions as convictive of ignorance, as illustrative of the evils of devotion to exclusive doctrines.

3. *By decomposition.*—Digestion may entirely destroy animal and vegetable poisons. Corrosive sublimate, lunar caustic, and hydrochlorate of tin, are also decomposed in the stomach; but in these last it is the result of a chemical, not of a vital process. The base of the poison may be found in the solid contents under some other form. Others elude detection by combining with other substances, without themselves undergoing decomposition. Lastly, there is another kind of decomposition that may render it impossible to discover the poison, although it has really been swallowed; this arises from decay of the body.

Section IV.—*Evidence from experiments on animals.* These are less to be depended on than was once imagined to be the case; indeed, it has been denied that they constitute the least proof. Dr. Christison thinks that this is rather over-stepping the proper limits.

There are two animals, the dog and the cat, whose food and mode of life resemble our own, in some respects; and, according to Orfila, they are affected by almost all poisons, exactly in the same way as ourselves. But even in these cases poisons act less violently; for instance, two drachms of opium are required to kill a middle sized dog, while thirty-six grains have killed a man. On the contrary, it is said that alcohol acts more violently on them than on man. There are, also, some poisons, equally deleterious to both, yet they produce different symptoms. Opium is of this class; in man it generally causes pure sopor, in animals it also produces convulsions. Oxalic acid, for the most part, excites merely excessive prostration; in animals it causes violent inflammation of the stomach, and convulsions. Functional differences will also produce different manifestations of the effects of poisons. Horses and rabbits cannot vomit; thus irritants cannot cause this action upon them. Arsenic, copper, mercury, the mineral acids, opium, strychnia, veratrum album, hydrocyanic acid, cyanogen gas, sulphuretted hydrogen, and many other poisons, produce nearly the same effects on man, quadrupeds, birds, amphibious animals, and even on fishes and insects. Dr. Christison says that this has been fully proved. There are many instructive remarks in this section, but we pass on.

Section V.—*Of the moral evidence.* This concludes the se-

cond chapter, and Dr. Christison, conceiving it to be of some importance to the physician and the lawyer, very properly enters into considerable detail, and endeavors to show (and very forcibly we think) how “powerful an instrument a medico-legal investigation may become in skilful hands, for throwing light on almost every branch of the evidence.”

“The moral proof in charges of poisoning is almost always circumstantial only. The circumstances of which it usually consists relate—1. To suspicious conduct on the part of the prisoner before the event, such as dabbling with poisons when he has nothing to do with them in the way of his profession, conversing about them, or otherwise showing a knowledge of their properties not usual in his sphere of life. 2. To the purchase or possession of poison recently before the date of the alleged crime, and the procuring it under false pretences, such as for poisoning rats when there are none on his premises to poison, or for purposes to which it never is applied. 3. To the administration of poison, either in food, drink or medicine, or otherwise. 4. To the intent of the prisoner, such as the possibility of his having administered the poison ignorantly, or by accident, or for beneficial purposes, alleged or not alleged. 5. To the fact of other members of the family, besides the deceased, having been similarly and simultaneously affected. 6. To suspicious conduct on the part of the prisoner, during the illness of the person poisoned, such as directly or indirectly preventing medical advice being procured, or the relations of the dying man being sent for, or showing an anxiety not to leave him alone with any other person, or attempting to remove or destroy articles of food, or drink, or vomited matter, which may have contained the poison, or expressing a foreknowledge of the probability of speedy death. 7. To suspicious conduct after the person’s death, such as hastening the funeral, preventing or impeding the inspection of the body, giving a false account of the previous illness, showing an acquaintance with the real or supposed effects of the poison on the dead body. 8. To the personal circumstances and state of mind of the deceased, his death-bed declaration, and other particulars, especially such as tend to prove the impossibility or improbability of suicide. 9. To the existence of a motive or inducement on the part of the prisoner, such as his having a personal quarrel with the deceased, or a hatred of him, his succeeding to property by his death, or being relieved of a burden by it, his knowing that the deceased was with child by him.”

“Upon many of the particulars now enumerated, important evidence may be derived from the medical part of the investigation, and not unfrequently such evidence may be collected or appreciated only by means of a medico-legal inquiry.”—p. 62.

Under the sixth head the following observations are met with; they should be borne in mind by medical practitioners who may happen to attend a case of poisoning. A little cau-

tious observance of circumstances, as here stated, may often lead to important moral evidence.

“In such a conjuncture, he is undoubtedly placed in a situation of some delicacy. But on considering the matter attentively, good reasons, will appear why he should adopt the course which, I believe, the courts of justice will expect of him, and keep some watch over the actions of any individual who is suspected of having committed the crime. On the one hand, no one else is, by education and opportunities, so capable of remarking the motions of the different members of the family dispassionately, without officiousness, and without being observed. And, on the other hand, it is undoubtedly a part of his private duty as a practitioner, to protect his patient against any farther criminal attempts, as well as part of his public duty to prevent the matters of vomiting and other subjects of analysis, from being secretly put away or destroyed. No one can be so occupied without many accessory particulars coming under his notice. And certain it is, that on several trials, the practitioner has contributed, with great credit to himself, a considerable part of the pure moral proof. For an example of discreet and able conduct under these trying circumstances, I may refer to that of *Dr. Addington*, the chief crown witness, both on the medical and moral facts, in the celebrated case of *Miss Blandy*. I need hardly add, that in acting as now recommended, the physician must conduct himself with great circumspection, in order to avoid giving unnecessary offence, or alarming the guilty person.”—p. 72.

On the eighth article, we have some observations on death-bed evidence. This is purely moral proof, and the question rests upon the possibility or impossibility of suicide; but it should be remembered that the general rule in the eye of law is, that the confessions of the patient are not evidence, unless they are made under the consciousness of the approach of death.

“Here it is right to take notice of a part of the death-bed evidence, although it does not properly belong to the question of suicide, because it should always be collected, if possible, by the medical attendant, and requires to be taken with much greater care than I believe is generally bestowed on it, even by medical men; I mean the history of the symptoms, previously to his being called in. On this part of the history, including, particularly, the time and manner in which the illness began, medical conclusions of extreme consequence are often subsequently founded: on a single fact or two may depend the fate of the prisoner. It is not enough, therefore, in my opinion, that such evidence formed a part of the death-bed declaration. If a fact derived at second hand, from the deceased, and stated too, by him, from memory, is an important element of any of the medical opinions on the trial, it is of much importance, that the information be procured by a medical man, and that the person who procured it, whether professional or not, was aware, at the time of the probability of its becoming important.

Such evidence, although not collected with these precautions, is admissible ; but I have so often had occasion to witness the carelessness with which the previous history of cases is inquired into, both in medical and medico-legal practice, that I do not see how it is possible to put trust in evidence of the kind, unless it bear marks of having been collected with care, and under an impression of its probable consequence. I shall enforce what is now said, by an example which lately fell under my notice. On the trial of Mrs. Smith, for poisoning her maid servant with arsenic, it was proved that some drug was administered by the prisoner, in a suspicious manner, on a Tuesday evening. Now, it was improbable that this drug contained a fatal dose of arsenic, because, to her fellow servants, of whom one slept with her, and others frequently visited her, the deceased did not appear to be ill at all for eight hours after, or seriously ill for nearly a day. On the contrary, however, a surgeon, who was called to see her on the following Saturday, a few hours before her death, deposed, that according to information communicated by herself, she had been ill with sickness, vomiting, purging, and pain in the stomach and bowels, since the Tuesday evening. This evidence, if it could have been relied on, would have altered materially the features of the case, as it supplied what was defective, namely, proof of the administration. But at the time the surgeon made his inquiries, he did not even suspect that the girl labored under the effects of poison. Neither he, therefore, nor his patient, could have been impressed with that conviction of the importance of the information communicated, which was necessary to insure its accuracy ; and it would, consequently, have been rash to adopt it in the face of more direct and contrary evidence. Any one who examines the details of this trial as I have reported them, will at once see how much the case turned on the point now alluded to.* p. 74.

Chapter III.—*Of Imaginary, Pretended, and Imputed Poisoning.* The medical jurist should rarely be seriously embarrassed by cases of *imaginary* poisoning, for the same excited imagination which leads to an idea of injury, will generally be accompanied by such extravagant notions of the mode of administration, by such groundless suspicions, and by such description of the symptoms, as will conduct the experienced physician to the true nature of the case. If the patient be suffered to relate the history of his symptoms, without contradiction, or having his fancied ills to be treated lightly of, it is almost impossible for a practitioner, acquainted with the real effects of general poisons, to be deceived.

Detection will, less generally, be apt to follow upon *feigned* or *pretended* poisoning, and even where there is suspicion, it

will be more difficult to come at the truth, for the same feeling which led to the feigning, will contrive the whole scheme so adroitly, as to make it apt to elude discovery. The investigation must be first directed to the state and progress of the symptoms. "In a case of feigned poisoning, an excellent mode of investigation is, after hearing out the individual's own story, to put a number of questions involving an alternative answer, one alternative being compatible, and the other incompatible with the alleged nature of his illness." In the next place, great attention must be paid to the chemical analysis. By this means a variety of deceptions will be detected. The substance said to be poison, will be discovered to be no poison at all. The matters vomited will not contain any of the alleged substances;—and sometimes, even if poison be detected in the matters said to have been vomited, it will be discovered that these have never entered the stomach;—again, the quantity of poison contained in the alleged matters of vomiting, will be greater than that confessed to have been taken. These and other inconsistencies, should lead to farther investigation, cautiously conducted, and thus the falsity of the story may be undeniably substantiated.

The following case affords a good illustration of the manner in which deception may be practised, and of the mode of satisfying our suspicions, notwithstanding the pertinacity of the actor in his assertions.

"A young married female, in the seventh month of pregnancy, having been discovered by her friends to be secretly addicted to dram-drinking, appeared to be much annoyed, in consequence of the discovery; and, one evening, was found apparently very ill, by her husband, on his return from work. She represented that she had taken arsenic, with a view to self-destruction; that she was in great torture, and that she was sure she would die. It was accordingly found, on reference to a neighboring apothecary, that she had, the same forenoon, purchased about a drachm and a half of arsenic, for the alleged purpose of poisoning rats; and, in the bottom of a tea-cup, in which she said she mixed it, there was left a small quantity of white powder, that proved, on analysis, to be pure oxide of arsenic. Notwithstanding these strong facts, the mildness of the symptoms, and the composure with which she complained of her tortures, led her friends to suspect she was feigning. On investigating her case, I first found, in further corroboration of her story, that the powder was no where to be found. But she then stated, in reply to questions involving an alternative answer, that the arsenic had a sour taste, and that the pain began in the lower part of the belly, and spread upwards. She likewise said, that she vomited a mouthful or two into a chamber-pot, twenty minutes after taking the poison; that she vomited no more till the apothecary was sent for, who gave her emetics of sulphate of zinc, carefully preserving the dis-

charges, and that she only vomited when emetics were given. When I first saw her, five hours after the alleged date of the taking of the arsenic, the skin was warm and moist, the face full and flushed, the pulse frequent and firm, the muscular strength natural. The chamber-pot contained only a small quantity of the feces of a child, and apparently a little water, but no matters of vomiting, and no white powder. The fluid discharged, in presence of the apothecary, was found, on careful analysis, to contain a large quantity of zinc, but not an atom of arsenic. She gradually recovered from the illness under which she labored at the time I saw her, and in two days, she admitted she was quite well, but continued to insist that she had taken poison. *M. Tartra* has related a singular case of the same kind, where a young woman feigned poisoning with nitric acid, and was not detected for several days." p. 78.

Imputed poisoning differs from the above only so far as another individual is alleged to be implicated in the poisoning. Although it is Dr. Christison's opinion that this criminal act has been attempted more than once, still the only authentic case appears to be the following, which has been several times copied in medical periodicals, but still we would wish in this instance, to present it to our readers, as immediately connected with the subject under notice, and for the perusal of those who may not already have seen it.

"Whalley was indicted at York Spring Assizes in 1821, for maliciously administering arsenic to Martha King, who was pregnant by him. The woman King swore, that the prisoner after twice trying, but in vain, to prevail on her to take drugs for the purpose of procuring abortion, sent her a present of tarts, of which she ate one and a half; that in half an hour, she was seized with symptoms of poisoning, with some irritant poison; and that she continued ill for a long time after. Mr. Thackrah found arsenic in the tarts that remained untouched, and likewise, in some matter that was vomited in his presence, after the administration of an emetic, as well as in other matters of vomiting, which were preserved for him between his first and second visits. Her appearance, however, did not correspond with the complaint she made of her sufferings; her pulse and tongue were natural: and, on careful investigation, the following inconsistencies were farther detected. 1. She said she felt a coppery taste in the act of eating the tarts, a taste which arsenic certainly never possesses. 2. From the quantity of arsenic in the tarts which remained, she could not have taken above ten grains, while, even after repeated attacks of vomiting, the alleged matter subsequently preserved contained nearly fifteen grains. 3. The first matters of vomiting contained only one grain, while the matter alleged to have been vomited subsequently, contained fifteen grains. 4. The time at which these fifteen grains were alleged to have been vomited, was not till between two or three hours after the symptoms

began ; in which case, the symptoms would, before that time, have been violent. The prisoner was acquitted, and the prosecutor and another woman who corroborated her deposition, afterwards admitted that they had entered into a conspiracy to impute the crime to him, because he had deserted her, on finding that she was too intimate with other men." p. 80.

We have now concluded our notice of the First Part of this work, and from the extended analysis given to our readers, we believe there can be but one opinion ; that Dr. Christison has shown a familiarity with the subject on which he has written, which must tend to elevate him to the rank of the first toxicologist of the day. This opinion would receive much additional strength, and all doubt would be removed, from an examination of the Second (and larger) Part of his labors. This includes the classification and history of individual poisons. It was not our intention, at first, to have presented any portion of these to our readers ; from the extent and character of the subject, we could only refer to the work itself. Still, as our limits will permit us to devote a page or two for the consideration of a few individual substances, we shall just select the two following.

CHAPTER V. *Of Poisoning with Oxalic Acid.* This substance, observes Dr. Christison, was first introduced to the notice of physicians, as a poison, by Mr. Royston, in 1814, in consequence of its having been taken by mistake for Epsom salts ; "a mistake which has apparently become more frequent since people were put on their guard against it." Oxalic Acid has not unfrequently been resorted to for the commission of suicide, and since its use has become so familiar in the hands of domestics for several household purposes, it is well to put ourselves in possession of the modes of testing its presence, when taken intentionally, or through accident.

Section 1. *Tests.* Oxalic acid, it is well known, strongly resembles the sulphate of magnesia ; but the taste is a sure criterion, and therefore, the best security against accidents, is always to taste a laxative salt before it is swallowed. In determining the tests, this substance must be considered in two states—dissolved in water, and mixed with the contents of the stomach and intestines, or vomited matter.

"1. In the form of a pure solution, its nature may be satisfactorily determined by the following process.

"The acidity of the fluid is first to be established by its effects on litmus paper. This being done, the reagents might be applied at once. But it is better to neutralize the acid previously with an alkali ; for then they act with greater delicacy. The remainder of

the process, consequently, applies not only to oxalic acid itself, but also, to all the soluble oxalates, which will be presently proved to be likewise active poisons. The tests are the hydrochlorate of lime, sulphate of copper, and nitrate of silver.

"*Hydrochlorate of lime* causes a white precipitate, the oxalate of lime, which is dissolved on the addition of a drop or two of nitric acid; and is not dissolved when similarly treated with hydrochloric acid, unless the acid is used in very large proportions.

"The solubility of the oxalate of lime in nitric acid, distinguishes the precipitate from the sulphate of lime, which the present test might throw down from solutions of the sulphates. The insolubility of the oxalate of lime in hydrochloric acid, on the other hand, distinguishes the precipitate from the tartrate, citrate, carbonate and phosphate of lime, which the test might throw down from any solution containing a salt of those acids. The last four precipitates are re-dissolved by a drop or two of hydrochloric acid; but the oxalate is not taken up till a large quantity of that acid is added.

"*Sulphate of Copper* causes a bluish white precipitate, which is not re-dissolved on the addition of a few drops of hydrochloric acid.

"This test does not precipitate the sulphates, hydrochlorates, nitrates, tartrates, citrates. But with the carbonates and phosphates, it forms precipitates resembling the oxalate of copper. The oxalate, however, is distinguished from the carbonate and phosphate of copper, by not being re-dissolved on the addition of a few drops of the hydrochloric acid.

"*Nitrate of silver* causes a dense, white precipitate, the oxalate of silver; which when collected on a filter, dried, and heated, becomes brown on the edge, then fulminates faintly, and is dispersed.

"The object of the supplementary test of fulmination, is to distinguish the oxalate of silver from the numberless other white precipitates, which are thrown down by the nitrate of silver from the solution of other salts. The property of fulmination, which is very characteristic, requires, for security's sake, a word or two of explanation, in regard to the effect of heat on the tartrate and citrate of silver. The citrate, when heated, becomes altogether brown, froths up, and then deflagrates, discharging white fumes, and leaving an abundant ash-gray, coarsely fibrous, crumbly residue, which, on the farther application of heat, becomes pure white, being then pure silver. The tartrate also becomes brown, and froths up, but does not even deflagrate; white fumes are discharged, and there is left behind a botryoidal mass, which, like the residue from the citrate, becomes pure silver, when heated to redness. Another distinction between the oxalate and tartrate is, that the former is permanent at the temperature of ebullition, while the latter becomes brown. The preceding process or combination of tests will be amply sufficient for proving the presence of oxalic acid, free or combined, in any fluid which does not contain animal or vegetable principles." p. 143.

2. Mixture with the contents of the stomach and intestines, or vomited matter.

Oxalic Acid has not any chemical action with any of the common animal principles, except gelatin, which it rapidly dissolves; and "this solution is of a peculiar kind, not being accompanied with any decomposition, either of the acid or of the gelatin." This acid, therefore, is not altered in chemical form by contact with the tissues of the stomach, or its ordinary contents. This, Dr. Christison observes, has been proved by Dr. Coindet and himself. A variety of soluble principles, however, are contained in the solution of the acid, made under such circumstances, which would cause abundant precipitates to be thrown down by sulphate of copper and nitrate of silver. The process for a pure solution, therefore, would not apply to these mixtures. Antidotes administered during life, also effect changes of still greater consequence. The proper antidotes for oxalic acid have been shown to be chalk and magnesia, each of which forms an insoluble oxalate; so if either had been given, no oxalic acid would remain in solution. The following process will apply to all the alterations which the poison may have thus undergone.

"The first object is to procure a solution. If an antidote has not been given, the contents and tissues, or vomited matter, are to be boiled, distilled water being added if required. The acid is then to be neutralized with potass, and the whole filtered. If magnesia or chalk has been given as an antidote, the insoluble matter is to be separated by filtration, and boiled for twenty minutes, in a solution of carbonate of potass in 18 or 20 parts of water. A double interchange of elements takes place between a part of the carbonate of potass and a part of the oxalate of lime or magnesia; and in consequence, some carbonate of lime or magnesia is thrown down, while some oxalate of potass will be found in solution. The fluid, after filtration, is to be neutralized with pure nitric acid.

"Oxalic acid being now in solution, whatever may have been its original state, the next step is to separate it from the animal and vegetable matter dissolved along with it. I have tried various plans for this purpose, but have found none to answer so well as precipitation with muriate of lime, so as to procure an oxalate of lime; which, after being well washed, is to be decomposed, by boiling it in a solution of carbonate of potass as before. An oxalate of potass will again be found in solution. The excess of alkali is finally to be neutralized with nitric acid.

"The fluid is now to be tested with the three re-agents, for the pure solution of oxalic acid." p. 144.

Section II.—*Action and Symptoms.* The action of oxalic acid varies very much. In a concentrated state, when the dose is considerable, say half an ounce, it causes death, in from two to twenty minutes. The morbid appearances are those of ac-

tive corrosion ;—the stomach contains black extravasated blood, —the inner coat of this viscus, is of a cherry-red color, with streaks of black, granular, warty extravasation; and, in some places, the surface of the coat is very brittle, and the subjacent stratum gelatinized, evidently by the chemical action of the poison. “If the stomach is examined immediately after death, little corrosion will be found, compared with what is seen if the inspection be delayed a day or two.” When considerably diluted, we find totally different phenomena. When dissolved in twenty parts of water, it ceases to corrode,—it hardly ever irritates. Nevertheless it is a deadly poison—in this it differs from the mineral acids, under the same circumstances. When the dose is large, the prominent symptoms are those of paralysis of the action of the heart; after death, this organ is found to have lost its contractility, and to contain arterial blood in its left cavities. When in solution, under the first condition, it seems to cause death by acting indirectly on the brain, spine and heart. The general symptoms, when the dose is considerable, are,—immediate burning pain in the stomach and also in the throat;—generally violent vomiting follows the pain, and it commonly continues till death;—the matter vomited is sometimes bloody; instant discharge of the poison does not always save the patient’s life. If the case last long enough, the tongue and mouth sometimes become inflamed. Death commonly ensues so soon, that the bowels are seldom much affected. The skin is cold and clammy; and, in general, the pulse fails altogether. It always evinces a depressed circulation. Nervous symptoms, such as numbness and weakness of the back and limbs, were noticed in the case of a girl. The same kind of symptoms have been noticed in other lingering cases. In a case related by Dr. Arrowsmith, there were two symptoms not before noticed. An eruption or mottled appearance of the skin in circular patches; and the poisoning and death of leeches applied over the stomach. *This curious fact beautifully illustrates the absorption in the blood, and diffusion throughout the body, of at least some poisonous substances.* We recommend it particularly to the notice of those who deny the pervasion of an organ by poisons, and also to those who talk of decomposition into elementary principles by assimilation, and re-composition by secretion.

Section 3. *Morbid appearances.* As this part of the subject is rendered very incomplete by the vague terms used by most authors of the history of cases, we pass on to—

Section 4. *Treatment.* From what we have said of the severity of the action, and the suddenness of death from this poison,

it is obvious that remedies can be of very little use in most cases. Emetics may be used, if vomiting have not already commenced—but dilution with warm water should be avoided, for this will only accelerate absorption. The principal object to be attended to, is the administration, as soon as possible, of large doses of magnesia or chalk, suspended in water. These substances both neutralize the acid and render it insoluble. We conclude this article with the following :

“Oxalic acid is one of the poisons alluded to under the head of General Poisoning ; of whose operation distinct evidence may sometimes (though certainly not always) be found in the symptoms. If a person, immediately after swallowing a solution of a crystalline salt, which tasted purely and strongly acid, is attacked with burning in the throat, then with burning in the stomach, vomiting, particularly of bloody matter, imperceptible pulse, and excessive languor, and dies in half an hour, or still more in twenty, fifteen, or ten minutes, I do not know any fallacy which can interfere with the conclusion, that oxalic acid was the cause of death. No parallel disease begins so abruptly, and terminates so soon ; and no other crystalline poison has the same effects.” p. 151.

CHAPTER XI. *Of Poisoning with Arsenic.* This is the most common article of poisoning. From the facility with which it may be procured, and the ease with which it may be administered, it more frequently falls under the notice of the medical jurist than any other poison.

The compounds of this article are several, viz : 1. the Protoxide of Berzelius, or *Fly-Powder*. 2. Arsenious Acid, or *White Arsenic*. 3. Arsenite of Copper, or *Mineral Green*. 4. Arsenite of Potass, as contained in *Fowler's Solution*. 5. The Arseniate of Potass ; and, 6. The various Sulphurets, pure and impure, namely *Realgar*, *Orpiment*, and *King's Yellow*.

We will confine ourselves principally to Arsenious Acid, as being the most common and important of all the arsenical preparations. This, it is known, is met with in two forms ; as a fine snow-white powder, and in solid masses, generally opaque, sometimes translucent. When newly sublimed, it has the last quality ; when long kept, the former. There has been a variety of opinions regarding its taste, and of course there must be an incorrectness in some of the prevailing notions. Some contend for an acrid, and others for a sweetish, but the truth is, as our author states, there is little or no taste in this oxide. At all events, it has been known to have been swallowed unknowingly with food. This is an essential fact in investigations, and should be remembered.

Of the Tests. It has been undervalued by some, but there

can be no real doubt of the assertion, that reduction is not only the most simple, but also the most characteristic test for the preparation under notice. By this means as minute a portion as the one hundredth part of a grain may be detected, as has been shown by Dr. Christison, in the *Edinburgh Medical and Surgical Journal*. This requires an experience in manipulation which few possess, but the fact is sufficient to establish the utility of the mode recommended. The only instrument, says the author, which should be used by those not very familiar with chemical analysis, is a glass tube. "When the quantity is very small, it should not exceed an eighth of an inch in diameter; and when the material suspected to contain arsenic is impure, the form of the tube should be that lately recommended by Berzelius."

Dr. Christison prefers newly ignited charcoal to the black flux usually advised to be used. This last is ineligible, if the quantity of oxide is very small. The spirit lamp is the best means of applying heat. The characters of the crusts are distinct: the surface next the tube is almost like polished steel, being a little darker in color, and equal in brilliancy and polish; and the inner surface is either brilliantly crystalline to the naked eye, like the fracture of cast-iron, or has a dull grayish-white color, but appears crystalline before a common magnifying lens of four or five powers.

"I have found them (the crusts) quite obvious in one which weighed only gr. 0. 0035, or a 286th part of a grain. In this observation, I am borne out by the high authority of Berzelius, who says that a 190th of a grain of the oxide is more than sufficient to yield a good crust; that he has procured a metallic crust from a quantity imperceptible to any of his balances. In order that a person unaccustomed to delicate chemical manipulations, may comprehend how the physical qualities of so minute a particle can be recognised, it may be mentioned that the crust, although quite opaque, is exceedingly thin, and, is therefore, extended over a proportionably large space. In the experiment just related, it occupied a tenth of an inch in a tube an eighth in diameter, and consequently, occupied a surface equivalent to the following parallelogram [_____]. The whole of this surface was resplendent and polished externally, and crystalline internally, before a microscope of four powers. I am particular in these details, because the attention of chemists has been too exclusively directed to the delicacy of the liquid tests, whereas the test of reduction is of equal or superior delicacy; and still more, because persons unacquainted with chemical analysis, are apt to be startled when they hear of a medical jurist deciding on the presence of arsenic from a crust of a twentieth, or even a tenth of a grain in weight. A crust weighing a twentieth of a grain, when properly formed, exhibits the physical

properties of arsenic to the naked eye with as great distinctness as any quantity, however large." p. 181.

If this process be questioned on the ground of its minuteness, it may be well to be reminded of the minute quantity in which gold may be recognised ; and of the extremely delicate accuracy of the hydrostatic balance, which, if a fine instrument, will show the weight of a thousandth part of a grain. As the test, by reduction, has been deprived of its full importance by the doubts of some, it will be well to notice the fallacies which have been supposed to render it thus equivocal.

"The fallacies to which the tests have been supposed to be liable, (excluding at present that part of it which consists in the oxidation of the metal, and which renders it quite unimpeachable,) are the following. *Dr. Paris* says he has known an instance where a person, "by no means deficient in chemical address," mistook it for a deposit of charcoal, and I have known the same mistake happen in the hands of one of my pupils, a beginner in the study of medico-legal chemistry. The outer surface of a charcoal crust may be mistaken for arsenic, by a very careless person ; but with ordinary care, it is quite impossible to err, if the inner surface is examined, for that of charcoal is brown, powdery, and perfectly dull. It has been suggested to me by many of my friends, and has been also stated in print, that the preparations of antimony yield, by reduction, a sublimate, resembling closely the crust formed from the preparations of arsenic. In point of fact, antimony really undergoes a sort of spurious sublimation under peculiar circumstances, as will be mentioned in the section upon that poison ; but in consequence of repeated trials, I am certain that no preparation of antimony, when reduced either by charcoal or the black flux, with the fullest heat of the blowpipe, will yield any metallic sublimate ; and the same facts have been observed by my friend, *Dr. Turner*. It is absurd, therefore, to talk of the presence of antimony as any fallacy in the way of the detection of arsenic by the process of reduction. It has even been said by *Mr. Donovan*, that the action of the flux on glass which contains lead, causes a stain somewhat similar to an arsenical crust. If it is meant by this observation, that the lead contained in the glass, usually gives that part of the tube which contains the flux, a glimmering appearance, and impairs its transparency, I believe the author is correct ; but if any one believes that a sublimate can be so formed, I must repeat, as in the case of antimony, that the thing is altogether impossible. Zinc, it is said, is sublimed in its metallic state ; but this fallacy is not of any consequence, for the sublimation of zinc requires a full white heat, much fuller than can be commanded by the lamp, even aided with the blowpipe ; which, in the process for arsenic, is never necessary. Tellurium, cadmium, and potassium, sublime at a much lower heat ; but these metals are so exceeding rare, that it is quite unnecessary to particularize the characters of their sublimate." p. 182.

For ourselves, we have no reason to doubt the reduction of the metal as the best and safest process for its detection. There is much said on this part of the subject, which our space will not allow us to extract—we can only refer our readers to the work itself, for the information given on this very interesting subject.

There are three conditions under which the medical jurist may find it necessary to search for arsenic ; 1. in its solid state ; 2. in a state of solution ; 3. when mingled with organic solids and fluids ; particularly with the contents and tissues of the stomach. The first two we pass over, with the remark that Dr. C. carefully examines the validity of the tests which have been at different times proposed.

In detecting arsenic in organic fluids, the first step of the process, is to procure a transparent solution ; the next is to free the fluid as much as possible from animal matter ; and then we may proceed to the precipitation by sulphuretted hydrogen ; the reduction of the sulphuret and oxidation of the metal. The mode of proceeding to these results must be familiar to the experimenter, and may be gained from the latest standard works.* It will not be expected of us to enter into the details ; we, however, will give the following as one of the latest processes.

“The next process to be mentioned is by far the best of those now under consideration, but it has no advantage, in point of delicacy or certainty, over that which I have adopted, and is much more complicated. It was proposed by Berzelius in his *Arsberättelse* for 1825, as a modification and improvement upon the one published by me in 1824 ; to which, as formerly observed, he objects that the sulphuret is not all decomposed during the reduction. The suspected substance is boiled in potass, and the solution is then neutralized with hydrochloric acid, treated with a stream of sulphuretted hydrogen, boiled and evaporated till the precipitate subsides. The precipitate is then collected, dried, mixed with nitre in larger proportions, and deflagrated in a tube. The product is next dissolved in an excess of lime-water, and the arseniate of lime, so formed, is collected and reduced with charcoal.” p. 201.

Dr. Christison remarks, on some inconveniences attending this process, that the whole sulphuret is not always separated from the solution, because animal matter has a solvent or suspending power over it : the deflagration of the sulphuret, although it takes place without flame, when the proportion of ni-

* There is an able article on arsenic from the pen of Prof. T. Romeyn Beck, to be found in *A Manual of Chemistry*, by Dr. Lewis C. Beck. Prof. B., however, does not, we believe, place equal confidence with Dr. Christison, in the test by reduction.

tre is large, has been found to be a precarious operation in the hands of the unskilful ; the arseniate of lime is partly retained in solution, and washed off this filter ; and the whole of the arsenic in the arseniate of lime is not sublimed.

The remaining sections—the 2d on the *Action of Arsenic*, and the *symptoms* it excites in man—the 3d on the *Morbid Appearances* caused by arsenic—and the 4th on the *Treatment* of poisoning with arsenic ; are all, but particularly the second, extremely interesting, and will well repay an attentive perusal of them.

We would be well pleased to continue our notice of this excellent treatise of Dr. Christison, but we must close at once, as we have already proceeded farther than entered in our design, when we sat down to our labors.

Our opinion will have been ascertained in the progress of our notice, and it is therefore unnecessary to repeat it here. Grateful for what Dr. Christison has provided us with in this volume, we can only wish him that success in his investigations, and that reward for his industry, to which his talents and perseverance so well entitle him. We are always pleased to meet with his continued contributions in our learned and venerable cotemporary of Edinburgh, and hope, ere long, to be favored with another volume of his labors on other branches of the valuable and interesting science of medical jurisprudence.

J. J. G.

ART. III.—*A short Tract on the formation of Tumors, and the peculiarities that are met with in the structure of those that have become Cancers ; with their mode of Treatment.*
By SIR EVERARD HOME, Bart., V. P. R. S., &c. &c. &c.
8vo. pp. 98—London, 1830.

NOTHING from the pen of this veteran surgeon can, or will be, disregarded by the profession. In his preface this good and great man bids us an adieu, dictated by a heart full of benevolence and gratitude. We, as well as himself, have cause to render grateful acknowledgments to the “All-wise Creator, who has permitted him to continue the investigation of his wonderful works for so long a period, and thus enabled him to alleviate the miseries of suffering humanity.”

In the little work before us, Sir Everard seeks merely to present us with the results of his own observations. It presents no ostentatious display of learning ; no useless array of words.

"He only speaks right on what he does know," a method which, if practised by the junior members, would greatly redound to the advantage of mankind, with the exception perhaps of printers and paper venders.

The formation and growth of tumors is a part of the debatable ground of pathology ; nothing has proved more refractory under the pen or the knife ; scarcely any two pathologists concur in many particulars, unless when there is an obvious collusion. To us it appears that, in regard to the formation of tumors, there is a degree of presumption in essaying to detect the irregular and capricious elaboration which produces diseased structure, while we acknowledge ourselves totally unacquainted with the nature of the hidden principle which works the growth of a *healthy organ*. Is it not absurd to attempt to reveal the efficient cause of the growth of a fatty tumor, when we absolutely know nothing of the vital operations which generate the adipose substance in which such tumor is formed ? The immediate cause or occasion of such diseased formation is, indeed, a legitimate subject of investigation. It may be, for instance, the rupture of certain cells by violence, or the effusion of a drop of blood ; but when the theorist goes on to explain the precise chemico-vital operations which produce a particular form of diseased structure, and bases the whole upon the revelations of the microscope, we must confess that, although more eager to find out the secrets of the "prison house," yet we are ready to cry out with Hamlet, that we will go no further.

In his physiology and pathology, our author is a strict Hunterian, betraying on almost every page some indefinite idea of a *materia vita diffusa*. Not only is the blood, with him, a living fluid, but even pus has a vital organization, and is capable of converting itself into a vascular tissue. The medical philosophy of Sir Everard too frequently derives its rationalia from physical science ; even gravity is *gravely* made to perform an important part in the production of certain tumors, by aiding to effect the disintegration of the blood.

The present volume is designed by the author to furnish facts which will illustrate and confirm doctrines advanced by him many years ago. We shall endeavor to present such an analysis of it as shall furnish our readers with its vein.

The drift of his argument is sufficiently manifest from the following brief exposition ;—"here we have only to consider those cases where either the blood or some of its ingredients, in consequence of external violence, are deposited in greater proportion than is required to repair the injury, as it is from this accumulation that tumors are produced ; and in general they resem-

ble in structure, more or less, the substance of the natural parts by which they are immediately surrounded."

Sir E. by no means attempts a general classification of tumors, but confines his observations to particular forms of morbid structure which have come under his frequent notice. His remarks, however, often apply to the structure and growth of tumors in general. He first acquaints us with a species of tumor sometimes developed in the substance of a nerve, and which externally bears a resemblance to common encysted tumors, being very movable, and spheroidal in shape. He relates a case which occurred in one of the brachial nerves in a female. On exposing it with the knife, it presented a smooth shining surface, and at each extremity terminated in a white cord. On cutting into it, the tumor was found completely invested by the expanded nerve. The diseased portion of the nerve, three inches in length, was excised, together with the tumor. This last seemed composed of serpentine fibres running in the course of the nerve, their interstices being filled with the substance of the tumor; but near its surface the tumor had a radiated appearance. He relates a similar case, which, in 1796, occurred in the arm of a man. There was great uneasiness produced by dragging the tumor. It was removed by mere incising the expanded nerve and pressing it out. In the centre it was obscurely fibrous, but near the surface it was radiated. Constitutional symptoms arose apparently from the injury inflicted upon the nerve, and the patient expired on the 5th day. The above facts, therefore, favor the inference, that *it is safer to extirpate a portion of a nerve than to excite an inflammation along a portion of it*. This accords with our experience in relation to the traumatic injuries of nerves.

Sir Everard remarks, that when these tumors are moved laterally, no sensation is produced; but when they are dragged in any other direction the pain is extreme.

Next he proceeds to the description of a remarkable tumor which had its origin in the diploe between the tables of the parietal bone. It occurred in a young female, and acquired a magnitude so formidable, with a very broad base, that several eminent surgeons declined using the knife upon it. Sir E. was, however, encouraged to undertake its extirpation by the absence of all cerebral symptoms. It was successfully extirpated. The author then takes occasion to deduce the following principles. *Tumors commencing in the diploe may destroy the external table while the internal remains entire. Tumors which are based upon the cranium may be with safety removed, provided no cerebral symptoms have occurred.* The following is a description of the operation.

"After maturely weighing all the circumstances, she cheerfully submitted to the operation, which I performed on the 9th of October, 1816, in the theatre of St. George's Hospital. The operation was begun by a crucial incision through the integuments down to the surface of the tumor; the four flaps of skin were turned back; and all the soft parts of the tumor, which consisted of fat mixed with a steatomatous substance, were removed; and as doing this had occupied a considerable time, the skin was brought over the remaining tumor, and the patient put to bed. The pain had not been severe, and was submitted to with great fortitude. On the next day the skin was turned back; the bony rim surrounding the base of the remaining tumor, formed by the external table, was exposed all round; and, as it was close to the orbit, a saw was so contrived that its blade could be passed between them, having an iron bow fixed upon the opposite side of the blade instead of behind; so that there was no impediment to the working of the saw till the extensive base of the tumor, that consisted wholly of bone, was sawed through. The integuments were then brought forwards; and, although they were at first so much too large as to be thrown into folds, they very soon contracted, and in a few days did not extend beyond the surface on which they were laid; and the parts healed in the same manner as any other wound, leaving a firm cicatrix, with a more regular surface than there was reason to expect. In the course of the healing of the parts, no symptoms, either local or constitutional, were produced." p. 15.

Sir Everard here deviates a little from his path, to discharge an anathema upon the science of phrenology. He says that, "cases of the above kind completely expose the fallacies of the doctrine of *craniology*, than which nothing can be more absurd, since the external surface of the internal table of the skull and that of the external table can never be under like circumstances, nor have similar changes produced by the same causes." Craniology may be *absurd* enough, but we opine that Sir Everard's arguments, drawn from a case, or indeed, *cases*, of change of structure from disease, are equally so. The Hon. author attacks a shadow, with the shadow of a weapon.

Cancer.—The most interesting section of the volume under consideration is that which treats of cancer. The author appears to think that local injury and other common causes of disease cannot generate cancer, unless there be a predisposition to such disease, and that when cancer arises from local injury, the disease is never cancerous in its commencement. He believes that diseases are never inherited, although the constitutions of children often so nearly resemble those of parents that when similarly circumstanced they will become the subjects of similar disease. This certainly is a very rational explanation of the phe-

nomena every day observed, if we except those infectious diseases which are imparted to the offspring by the mother.

The following extract will give the reader a correct idea of the author's opinions in relation to the organization of cancerous tumors. "If a part made up of glandular structures is bruised, the vessels composing the glands are ruptured, and throw out their contents: these consist partly of the fluid secreted, and of those ingredients of the blood that are undergoing the necessary change to form the peculiar secretion. In this case a tumor is formed differing exceedingly from that of an aneurism in its contents: in one part there are lymph globules only, forming solid masses; in others there are similar masses of blood globules, with tubes of carbonic acid gas passing through them, which become vessels filled with red blood. This is the structure of what has hitherto been denominated a scirrhus, and has been always considered as the previous stage to a true or stony cancer."

"If we analyze this structure, and trace the future changes the parts undergo in the progress of a cancerous disease, I am induced to consider the serum and lymph globules to be the parts which become vitiated and rendered capable of propagating the morbid poison." This he infers from the absence of blood in the tumor, from its hardness, from the aqueous character of its discharge. To our simple apprehension, however, all this seems to be extremely unsatisfactory. It is difficult to conceive how serum and lymph globules, when extravasated, can assume a specific diseased character, and be able to impart it to adjacent vital tissues. It would be useless, however, to attempt to disprove the proposition. The burden of proof rests with the author; his conclusion is merely assumed.

The author here gives us his theory of the formation of granulations in wounds and ulcers. Pus, he says, (and this is admitted by many,) is serum containing blood globules modified in color, lymph, and carbonic acid. When exposed to the air, it coagulates, becomes vascular, and is resolved into granulations. We have been struck with the identity of this opinion with that expressed by a writer (M. Medalon) in the *Prix. de L'Académie de Chirurgie*, as early as 1733. This intelligent writer evidently regards laudable pus as a secretion, and asserts that it is furnished for the purpose of generating new flesh, and repairing solutions of continuity. He speaks, indeed, of two stages of suppuration which we think ought always to be recognised: a preparative suppuration, and a regenerative. In the first, the pus furnished is partly composed of blood, serum, &c. with which the inflamed tissues are engorged, and which must be discharged be-

fore any recuperative process can be established. In the regenerative suppuration, which follows the former, the pus is pure, and out of it the destroyed parts are regenerated and cicatrices produced.

In the most brief and explicit language which we can use, the opinion of our author in relation to the etiology of cancer is this. He believes that a contamination of the system precedes the occurrence of local disease; that the local alteration of structure is generally first produced by some accidental injury; that the serum and lymph which are poured out after such injury assume a specific diseased action from the constitutional taint. He believes that no accidental lesion or consequent inflammation can produce cancer in a healthy constitution. In proof of this, here marks, that the females of Otaheite are in the habit of settling their little differences by a vigorous set to at fisticuffs. In these *gentle passages of arms* they often suffer severe pelts upon the breasts, which are much exposed; but scirrhus tumors are never known to be thus produced.*

The experience of our venerable author seems, on the whole, to be adverse to the extirpation of scirrhus tumors, when of long continuance, and when there is the slightest evidence that neighboring glands have been contaminated. It must undoubtedly be admitted, that success in the extirpation of tumors truly cancerous, is far less frequent than has been believed. By a nice discrimination of those tumors which affect the female breast, we have learned that many forms of disease believed to be scirrhus, are of totally a different character; and undoubtedly, all the boasted success of quacks, and not a little of that of scientific surgeons, has arisen from confounding curable disease with cancer. How often has the irritable breast, described so accurately by Sir Astley Cooper, been submitted to the knife, and thus exalted the value of this remedy, as applied to cancers? We give a case or two, showing the progress of cancer, both when left to itself, and after operation.

"A lady, between fifty and sixty years of age, had a cancerous tumor in the breast, movable upon the pectoral muscle. This was

* We would modestly suggest to Sir Everard, that possibly the smothered wrath of the more refined of the sex, which would fain vent itself in pulling of hair and rending of caps, but for the cruel restraints of society, makes all the difference which he notices. These mild creatures, incapable of the protracted feuds of civilized life, vent at once their venom and their blood, while in the lady of quality, who is obliged to smile while she would immolate, they are shut up and concocted, till the above-mentioned constitutional contamination results.

thought by the surgeon in the country a case for operation ; but Mr. Cline, on examining it, was of a contrary opinion. In about two months from this period, the arm had become much swollen, and at this time my opinion was requested, which accorded with that of Mr. Cline ; but we were unable to convince the surgeon in the country that he was not in the right. He said that the swelling in the arm made no part of the disease, and was only a sympathetic affection, which could be readily reduced. I told him, that as soon as he succeeded in reducing the swelling of the arm, neither Mr. Cline nor myself would object to the operation upon the breast.

“ By means of bandages he was enabled to diminish the size of the arm, but not to prevent the return of the swelling to the same degree as before, when the bandages were omitted. The disease continued to increase, and in a few months the patient died.

“ A lady, fifty-eight years of age, had a tumor in the breast, which, for nine or ten years, had been growing to its present size. Several glands in the axilla were enlarged ; the tumor itself made slow progress, but the skin which firmly adhered to the tumor, and had an appearance of being tucked down upon it, had in the neighborhood become studded over with small tumors, resembling split peas. They first appeared there, but in nine months they were met with all over the body, on the opposite side as well as that on which the tumor had formed. They were in no place close together, being about an inch apart, and nearly the same in size, but rather larger near the original disease. They gave a considerable degree of uneasiness, and her health was much impaired. In a few months she died. The tumor had previously become painful ; frequent retchings had been produced, and her stomach retained little or no food.

“ It is a question whether the smaller tumors in the skin were cancerous, although consequences of that disease, since they are met with in cases in which no previous cancer had existed.

“ A lady of a delicate habit, who, before she was 37, had several children, and had had milk abscesses in both breasts, found a small tumor in her left breast ; besides this, the glands in the axilla were enlarged. This tumor I did not believe cancerous, as the glands in the opposite axilla were also enlarged. The tumor increased in size in the course of a year ; and in another year was still larger. In the third year the glands in the axilla were more swelled and painful, and a small tumor formed in the skin, near the original one. In the fourth year all the symptoms increased, and a second tumor formed in the skin. An inflammation in the lungs, to which she was subject, now came on. From this time she never noticed her breast, in which the symptoms remained stationary ; and after an illness of four months, she died.

“ An operation would have hurried on the disease, and caused her death at a much earlier period.

“ A lady, fifty-seven years of age, had a small tumor in the breast, without pain, the size of a pea. In two years it had scarcely enlarged. At that time she received a blow upon it, and it after-

wards rapidly increased, with occasional pain. Six months after this I saw it. The tumor, which was situated above the nipple, was too large and too firmly connected with the surrounding parts to encourage an operation proving successful. I saw it occasionally : its increase was uniform ; no glands in the axilla became enlarged, but one swelled above the clavicle. In six months she had a violent inflammation in her lungs. On her recovery, the tumor had become very large. After another year, a tumor formed between the breast and clavicle, and two small ones above it. At this time an empiric gave her promise of a cure ; but she was to give him a guinea a day till it was effected. I begged to have an interview, and told him that if he failed, I should ruin his character by my exposure of it, and as the glands above the clavicle were affected, he could not succeed ; in this way the attempt was abandoned.

“Two years more the original tumor became a sore : this was five years after it had been struck. The ulcerated surface was about the size of half a crown ; it discharged a considerable quantity of limpid fluid : the ulceration increased rapidly, the edges rising higher than the surface of the sore. In two months a bleeding took place, which was readily suppressed ; this returned periodically every three weeks, to the quantity of eight ounces.

“At the end of the sixth year the ulcer became very large ; and from the thickness of its margin, covered with an imperfectly formed cuticle, it acquired a great depth. Her general health became impaired ; and the pain was so severe that she took two hundred drops of laudanum twice in the day, to afford her intervals of ease.

“At the end of the ninth year, she died, worn out by the repeated bleedings and the progress of the disease. The only treatment made use of was powdered extract of hemlock, which for years considerably diminished the pain ; so much so, that when some which had been prepared with great attention was expended, and that made in the ordinary way was substituted, she complained that it had lost its beneficial effect. Had she employed the empiric, her life would have been shortened, and her income, which was small, eaten up.

“A woman, fifty years of age, had a tumor in the breast, which had not arrived at a large size, and was unaccompanied with enlargement of the glands in the axilla ; it was therefore extirpated by Mr. Hunter, in 1774. The wound was slow in healing, and a knot the size of a pin's head appeared on the cut edge of the skin ; in two days a second knot appeared, at the distance of three fourths of an inch : these increased rapidly in size, and were destroyed by caustic. The wound healed, and she never afterwards had return of the disease, but died of a dropsy, seven years after the operation.

“This case proves that, in the first instance, the appearance of small excrescences on the cicatrix of the wound, made in the removal of cancerous tumors, is not always of a morbid nature, and capable of carrying on the disease.

“A lady thirty-two years of age, the mother of several children, discovered by accident a tumor in the breast. As the tumor was

movable, means were taken to disperse it ; but these proving ineffectual, I was consulted, and advised its removal, which was acceded to. At the time of the operation, the tumor moved freely in one direction, but was more confined in that of the fibres to which it was found to be attached, and part of that muscle removed along with it. The wound healed in three weeks. In six months after the operation, a fulness was felt in the pectoral muscle, attended with pain ; in a twelvemonth a tumor had formed, and the skin was put on the stretch. The pain had become intolerable ; the tumor daily increased ; and, upon her being seized with vomiting, the lower part became discolored from the rupture of the smaller vessels. A fortnight afterwards the skin broke, and a fungous excrescence appeared, covered with blood, from the vessels in the surface giving way. In about three weeks, she died.

“From this case we learn the difference which the disease of cancer puts on in a glandular structure and in a muscular one : it also explains to me the nature of the true hæmatodes, which is the effect of cancer when a muscle is the seat of the complaint.”

Sir Everard regards the tongue as being, next to the mamma, the organ most subject to cancerous affections. “Any local affection,” he says, “is liable to take on a disposition to become cancerous.” He thinks, therefore, as such affections must, if not extirpated, speedily prove fatal, it is proper to employ the knife, even when the condition of the ulcer is doubtful. In *all cases* where he has resorted to the operation before the disease has largely extended, it has proved successful. He accomplishes the extirpation with the ligature, which is passed double through the tongue, and then tied on each side of the disease, so as to include a portion of the shape of the letter V.

Cancer of the testis, according to Sir E., has two modes of making progress. In the one case the organ becomes affected with an exceedingly hard scirrhus, contaminating the cord and lymphatic glands as high as the loins. The other form contaminates the contiguous parts, and propagates itself by the neighboring lymphatics. Extirpation is generally successful when performed at an early period.

Our author remarks, that cancer is often met with in other tissues, besides those of the glands, its character being modified by peculiarities of structure. Sometimes it appears to be the immediate consequence of accident ; in other cases, the degeneration of some chronic disease of the part, there being no security against such diseases taking on cancerous action after long continuance, especially in very old persons.

In conclusion of our author's observation on Cancer, he remarks, “Having stated the principal cases that have come under my observation, so as to explain its nature and symptoms, and their progress in particular instances ; and having had the

opportunity continued to me for half a century of paying attention to this subject, I am sorry to add, that very little progress has been made either towards a cure or prevention of the disease taking place. Many tumors, like those that formerly were by violent applications rendered true cancers, now never take on the disease; but no one is enabled from such evidence to prove that their more ordinary course would ever have led to such a termination. The progress of the symptoms having been decidedly retarded and rendered less violent, is sufficient evidence that such mild means have been employed with great advantage, in cases which were of a dubious nature."

"The treatment in my own practice that calls forth this commendation, is *the internal and external* use of hemlock; and in proof of its efficacy, in some cases when the medicine was left off, the symptoms became more violent; and when resumed, abated. Also when the powder of the leaves was prepared at the proper season, and the light entirely excluded while the drying of it was carried on, even in confirmed cancerous ulcers, benefit was derived in so great a degree, that the patient could ascertain from increase of pain some change had taken place in the application, when powder less accurately prepared was used as a substitute for the other. I have even prevented the operation when the day had been fixed, and the patient lived for months under this palliative mode of treatment, without any progress of the tumor, and was carried off by epileptic fits. In many cases the swelling diminished, and in others remained stationary for years, and never afterwards made any advance: so that I am convinced that I had before been too much alarmed, and frequently came to an operation before it was required."

The author, in the course of his remarks, expresses his belief that the disease now denominated *fungus hamatodes* is nothing but carcinoma located in the muscular texture, and taking its peculiar traits from the peculiar organization of the parts concerned. The experience of many surgeons will, however, we are confident, gainsay this assertion. We ourselves have twice extirpated tumors, unequivocally of this character, from the neck, and which had their nuclei in the lymphatic glands, the muscles being not even adherent to the tumor, when it had assumed a very large size. These tumors were lodged beneath the sterno-mastoid and omo-hyoid muscles, and these were tightly drawn over them in both instances. The aspect of each tumor, when laid open, was totally different from that of carcinoma, and corresponded, very satisfactorily, to the description of such tumors given by Mr. Hey. In one of these cases the disease returned and involved muscles, blood-vessels, and even the bone, converting each into its own morbid structure.

In regard to the employment of *sarsaparilla* as a remedy for that state of the constitution which tends to render local affections malignant, our author remarks, "It is now fifteen years since I was taught by experience, that the *sarsaparilla* in the form of decoction, has not the same powers of a restorative medicine as in the form of a powder, to which heat had not been applied. Mr. Cline has ascertained the same fact: this I found when in consultation upon the case of a young gentleman, who had his uvula destroyed by ulceration. In this case, several medical men gave an opinion in favor of nitric acid and of the use of the decoction of *sarsaparilla*. Mr. Cline and myself warmly expressed ourselves in favor of the *sarsaparilla* in powder; and our suggestions were adopted. In the course of four days, the ulceration had been restrained by its use; and in less than a week the patient was allowed to be out of danger. From that time I never employed the *sarsaparilla* that had been exposed to heat, either by the fire, or in the sun's rays, in the window of an apothecary's shop.

"In a case of ulceration of the palate and uvula, for which the patient had taken nineteen quarts of strong decoction of *sarsaparilla*, under the direction of one of the most respectable surgeons in Edinburgh, who made up in his own house the medicines which he employed, and, therefore, there could be no doubt of their being of the best kind, and prepared with every proper care—the ulceration was still going on, and he came to London with the twentieth quart bottle in the carriage. Upon taking two drachms of the powdered root, freshly ground, three times a day, he recovered entirely in less than fourteen days."

"Since I have taken up the use of the *sarsaparilla* in substance, I have been more successful in reducing glands that have become diseased than by any other means. I have in two cases of pulpy enlarged testicles, after the disease had increased to a great degree, and resisted other modes of treatment, had the satisfaction of restoring the organ to a natural and healthy state."

"So much am I satisfied of the great superiority of *sarsaparilla*, when not weakened by exposure to the heat, in restoring the constitution that has become diseased, and of enabling parts that had taken on the symptoms too frequently preceding cancer, to recover themselves, that, in my own practice, I never resort to any other means, in cases of this kind, till it has been tried."

N. R. S.

MEDICAL INTELLIGENCE.

ANATOMY AND PHYSIOLOGY.

1. *On the Development of the Vascular System in the Fetus of Vertebrated Animals.* By Dr. ALLEN THOMPSON.—(*The Edin. New Philosophical Journal.*)—On this mysterious and important process, Dr. Allen Thompson has made a valuable series of observations and experiments. The details of these are necessarily lengthened and minute. But we shall attempt to give a short view of them, and especially of the results at which the ingenious author has arrived.

From the facility with which observations may be made on the egg during the process of incubation, physiologists have almost exclusively confined themselves to observe the development of the parts of the chick *in ovo*; and the facts thus collected have been by analogy presumed to be true in regard to the fetus of the mammiferous animals, and of the vertebrated classes generally. It is remarkable, that, notwithstanding the danger of mere analogical inference regarding living bodies, and notwithstanding the cautions with which it ought to be applied, no very serious objection has yet been proved to exist in this instance of its use, and all the observations hitherto made on the chick are found to hold so truly of the viviparous class as to facilitate very much the study of organic development in them.

According to the observations, especially of Wolff, verified by Pander, Meckel, Oken, Blumenbach, Baer, Rathke, Cuvier, and some others, it results that the part of the *ovum* in which the rudiments or elements of the fetus are to appear consists of a thin layer of granular substance situate on the surface of the *vitellus* or yolk. This glandular substance, which has been, from this function, denominated the *germinal membrane* (*Blastodermis*), in the impregnated egg, becomes eventually more distinct, and gradually separates into three layers, a *serous*, *vascular*, and *mucous*. The first of these, which is the most exterior, is situate immediately beneath the membrane of the yolk, and by the changes which it undergoes in the progress of evolution, it constitutes the rudiment or basis of the brain and spinal chord, the walls of the large cavities, the muscular and osseous systems, and the integuments of the fetus, and even its proper investment or amnios. The next layer is the *vascular*; and in this the parts of the vascular system appear to be developed.

The third, or *mucous* layer, which is placed immediately on the surface of the yolk, is in general intimately connected with the vascular or middle layer; and to the changes which these two layers undergo, the intestinal, the respiratory, and glandular systems, owe their origin. To know the progress, therefore, of fetal development, it is essential to have a distinct idea of the progress of that of the vascular layer.

The first change which the germinal membrane undergoes after impregnation, is the formation of a small dark line on the upper part of the *cicatrix*, near the centre of the transparent *area*, and which indicates the site and formation of the spinal canal. As incubation proceeds, this area becomes larger, more pellucid, and defined; the separate existence of the serous and mucous layers is manifest towards the 12th or 14th hour; and the dark streak is broken into transverse portions, which indicate the site of the dorsal vertebræ. About the 25th hour the layers of the germinal membrane, which cover nearly one third of the circumference of the yolk, no longer retain their flat and uniform position, but exhibit various folds, which afterwards contribute to form the cavities. As these folds increase, they gradually turn in below the fetus at its head and tail, and their margins approach each other below the abdomen, which at this period lies next the substance of the yolk. The layers of the germinal membrane being bent down in a similar manner towards the sides, there is formed under each end of the embryo a shut sac communicating with the yolk by an aperture common to both. These sacs constitute the rudiment of the intestinal tube; the anterior corresponds to the esophageal part of the intestine, and the posterior to the anal end.

The rudiments of the heart appear about the 27th hour at the lower side of this esophageal part of the canal, and are formed by the vascular layer being moulded into a sort of dilated tube in the space between the mucous and serous layer. This applies chiefly to fowls at the 35th hour; for in the *MAMMALIA* the first appearance of the heart has not been examined. Blood at the same time is formed; but motion does not commence till the 38th or 40th hour; after which a slow and regular contraction begins to take place in the posterior end of the tube, and gradually extends to its anterior. Part of the wall of the tube then becomes constricted, indicating the separation of the auricle and bulb of the aorta from the ventricle. The tube is incurvated, and its two extremities are brought together, making the auricle and aortic bulb approach each other; and hitherto the heart contains only one cavity or chamber. Its subdivision into several begins to take place in the following order.

1. In fishes and the ranine reptiles the shape is completely moulded; the ventricle becomes thick and muscular; the auricle is dilated, and valves are formed near the apertures. The heart, however, remains simple and undivided in chambers, and the ingredient blood is propelled through a single vessel. 2. In the saurian, ophidian, and chelonian reptiles, while the same or analogous changes take place in the general structure of the heart, in the strength and

thickness of its walls, or in the relative position of its parts, the cavities of this organ become more or less completely divided, so as to separate the blood passing through into more than one stream. The manner of this partition is effected by the formation of a *septum* in the auricle, advancing from above downwards, and in the ventricle ascending from the *apex* towards the base of the organ. 3. In the birds and mammalia the heart undergoes the same subdivision; and, during the formation of the partition, the right and left chambers, for some period of fetal life, communicate with each other. Finally, however, in these two classes the partitions, separating the right and left chambers of the auricles and ventricles, are completed; and no communication is left. 4. In the mammalia, the growth of the *septum* within the ventricle is accompanied by the formation of a notch or constriction on the outside, by which the apex of the heart is rendered for some time bifid. At the same time, in the higher reptiles, as in birds and mammalia, the bulb of the aorta is also divided, so as to enable each of the ventricles to communicate with those vessels only into which they propel blood during the subsequent course of life.

The formation of the arteries is a complicated process. In all vertebrated animals the anterior part of the intestinal tube is encompassed by four or five pairs of arterial vessels formed by the subdivision of the ascending aorta, which, passing round the *esophagus*, unite again with each other above the tube, and below the vertebral column, to form the dorsal or thoracic aorta. Among fishes, in the cartilaginous division, all the branchial branches of the aorta remain permanent to form gills, in which they are minutely subdivided, forming arteries and veins; but in the osseous division of five pairs of branchial arches observed in the fetus, four remain to form gills. In reptiles two branchial arteries only in general are left. In birds, the second pair of arches, and the fifth of the right, are obliterated without giving rise to any other branches. The first and third form the *arterie innominate*, or carotid and subclavian arteries on both sides, the communicating branches between these arches and the roots of the aorta being obliterated at an early period. The fourth arch on the right side alone remains pervious during life, and forms the trunk of the aorta from which the *innominate* arose. The fourth arch on the left, and the fifth on the right, united in a common root, give rise to the pulmonary arteries; and as they remain pervious till birth, they form the *ductus Botalli* or *ductus arteriosus*, leading from the right ventricle into the aorta. In the mammalia nearly the same changes take place in the transformation of the anterior arches; but the aorta is then formed by the fourth arch on the left side, and hence this vessel is found on the left of the *esophagus*. The fourth arch on the right, and fifth on the left, appear to give rise to the pulmonary arteries. In the mammalia the *ductus Botalli* is formed, not as in birds or lizards, by the persistence of the posterior part of the pulmonary arches, but by a communication left in the aortic bulb between the roots of the pulmonary and systematic trunks.

We have given the foregoing account of a paper very difficult to abridge ; and of which our limits do not permit us to give more ample details. But we cannot conclude this notice without saying, that the manner in which Dr. Allen Thompson has conducted his inquiries is highly creditable to his talent for minute observation and accurate research. The whole paper merits the attentive perusal of the physiological reader.—*Edinburgh Med. and Surgical Journal*, July, 1831.

2. *On the Liver and Spleen.* BY DR. HOLLAND.—This gentleman has attempted to disprove the idea that the bile is secreted by the *venæ portæ* and contends for the *Diverticulum* functions of the Liver and Spleen. It will be remembered that Rush considered the latter organ as a sort of cistern, receiving the redundancy of blood in the system. A hundred other opinions have been entertained ; the latest, however, which we have seen, is that of Dr. Miller of Baltimore. Dr. M. makes this viscus a gaggionic cerebrum, holding the same relation to the great sympathetic, as the brain proper and the spinal cord do to the motory and sensitive system of nerves. When phenomena are not susceptible of pure inductive demonstration, men are more apt to suppose any thing, no matter how absurd or improbable. This seems to be the case in regard to the functions of the spleen.

“ From what has been previously explained,” says Dr. Holland ; “ it is evident that the hepatic artery is regarded as the source of bile ; and believing the production of this to be only one function of the liver, it is my intention to account for the great quantity of venous blood transmitted to it and the spleen. Both organs are well adapted to receive a great share of sanguineous fluid, whether we consider the texture as composed of blood-vessels or of cells.

“ The function of the spleen, as well as that of the liver, independently of the secretion of bile, is considered a *diverticulum* of the system. *If the veins which form the vena porta had passed directly to the vena cava inferior, a thousand accidents, arising either from mental or corporeal disturbance, would have continually placed the life of an individual in imminent danger. Every passion, whether of an exciting or depressing character, and every general and local disease, if severe, whether chronic or acute, would have been liable to have deranged the lungs and heart. I have already endeavored to show, that passions, of a depressing nature, bring the blood in greater quantity than usual from the inferior and superior extremities, and also from the surface of the body to the chest ; and I have also stated, that the abdominal viscera participate in the engorgement. Since the body is continually liable to such changes, baneful effects would follow, unless nature had provided organs, whose situation, function, and organization, enable them to diminish the burden imposed upon those, whose constant and almost regular action is indispensable for the maintenance of life.* This object is beauti-

fully answered by the liver and spleen. The organs within the chest must be regarded as possessing vital functions. If the lungs were surcharged with blood, or in a condition approaching to it, the properties and distribution of this fluid would be immediately disordered, and with this primary derangement every part of the body would quickly sympathize.

"The liver and the spleen, from being placed close to the thorax, are calculated to relieve the congested lungs and heart, or rather to protect them from sudden and violent commotions; and are also favorably situated to protect in the same manner the stomach, whose action is scarcely less vital."—*Med. Chir. Review, July, 1831.*

3. Professor Delpechon operation for Scrotal Elephantiasis, addressed to Sir Astley Cooper, in relation to the recent operation on Hoo-Loo at Guy's Hospital.—Mankind has a right to expect from those who have devoted their existence to the curing art, that they shall publish the truths which they have discovered in the pursuit of their profession. This desire of publicity should preside over all our endeavors, and whatever may be the result, we are bound to present the world with the fruits of our experience. With this feeling it is that I have given publicity to my works—conduct in which vanity certainly has had no share; it is the same feeling, I must believe, which has actuated the author in publishing an account of the operation for scrotal elephantiasis, lately performed by Mr. Key under your eyes in Guy's Hospital; it is, in short, this feeling which determines me to submit my doubts to you on this operation, and to ascertain what will be the most convenient form to be adopted and followed in operations of this kind. I address myself particularly to you, whose enlarged knowledge and great experience render you particularly capable of resolving those doubts.

A long time since, stimulated by observing the inefficacy of the ordinary means for curing the prodigious intumescence of the scrotum and the skin of the penis in this disease, my attention was particularly directed to the fact, that scrotal elephantiasis was not only common to parts of Asia and America, but also to some countries of Europe, viz. Roussillon, Low Provence, and some parts of the east coast of Spain, and the Greek Archipelago. From the numerous circumstances under which I have been enabled to study this disease, I have convinced myself that the genital organs are commonly sound, and maintain their functional powers. I have thought also that I had positively ascertained that the true situation of the disease is in the reticular part of the skin, which is disordered by a kind of hypertrophy to such an extent, as to lead us to expect that it would not again resume its former condition; and that the œdema of the cellular texture, and its over-prodigious serosity, are but effects of an obstruction to absorption by the diseased veins.

This observation inducing me to conclude that the disease of the skin itself was incurable, I was led to think it might be possible to

treat it empirically by ablation, with a view to avoiding the horrible sacrifice that a man suffers by an operation which deprives him even of the advantages of his sex, and, what is more important, to avoiding the weakness and morbid sympathies which such a state can hardly fail to produce. This project of chirurgical medication appeared to me to be the more rational, from my having found the genital organs sound in the numerous cases which I have witnessed, and from its appearing to me that they might be essentially so in all instances—the object being therefore only to dissect off the skin. There has ever seemed to me to be a most serious difference between cutting off, and leaving, the testes and other privy parts. Indeed, the condition of preserving them I have always considered so important, that without it I should deem the performance of the operation impracticable.

This plan was put in operation at Montpellier on the 11th of September, 1830, as I have since published in the second volume of the *Chirurgical Clinic of Montpellier*. Many medical gentlemen, English, American, German, &c., who visited the faculty of Montpellier at that time, saw the patient in a very satisfactory state, the recovery being so rapid, that on the tenth day the result was no longer doubtful. One of the visitors, to whom I gave, at his request, a copy of the designs I had made, published it in a *Philadelphia journal* a long time before the publication of my *Clinic of Montpellier*. I believe that the state in which the parts were found during and after the operation, the rapidity of the recovery, and the perfect restoration of the functions of the preserved organs, prove that the method of operating which was followed was strictly methodical, and in conformity with the indications.

I was surprised, on reading that a similar operation, in which the genital organs and their coverings were cut off, had been performed in the United States, and my astonishment was much increased, when I learned that, in the first hospital in England, under the eyes of the first surgeon of the age, and by the hands of one of the most skilful operators of London, the operation had been repeated in the same manner. I know that you did yourself effect it formerly with success, and I am led to believe, that had you thought it possible or convenient, you would have recommended to Mr. Key the conservation of the privy parts. Am I mistaken in the appreciation of the indications? The success which I have obtained, the state of things, all my recollections, induce me to think differently; and I confess that, without the full conviction which your uncommon merit is calculated to produce in my mind, I should think myself conscientiously bound to follow the same method.

I shall not argue from the great difference in the results. I know well how great a difference in the effects of an operation may be occasioned by differences of constitution. Nevertheless I must confess, that the death of the patient under the knife, in *Guy's Hospital*, has sensibly affected me. I only know of two causes which may occasion the decease of a man on the operation table—hemorrhagy, and the passage of a volume of air through a great

vein to the heart. I know examples of each kind, and have myself published some. As for the pain, it may certainly kill in a few hours, when the operation has been too much lengthened; but there is no example of pain being fatal *sur-le-champ*. I confess that, in spite of what has been published, I am much inclined to think that hemorrhagy was the chief cause of the death of the poor Chinese who underwent the late operation in London. It seems to me, indeed, very difficult to suppose that they could have stopped in sufficient time the hemorrhage which was furnished by the very much dilated external arteries of the privy parts, the important branches of the internal arteries of the same parts, the hemorrhoidals inferior, the spermatics, the dorsal, and those of the corporis cavernosi, and corporis spongiosi, of the penis.

It appears also to me, much more safe to perform the operation in such a manner, as not to be obliged to obliterate either the testicular arteries, or those of the corporis cavernosi and corpori spongiosi of the urinary canal, being the vessels of the viril member which are always long and difficult to attain. In a word, it seems to me, also, that the importance of an operation is just in relation to the importance of the parts to be destroyed, and, under this consideration, the importance of the ablation of the testicles and the privy member, must be greater than in an operation which would have the same result without this loss.

It belongs to eminent men—to the noble sincerity of your character—to the high rank which you fill in our profession and in the world,—to form an opinion on so important a point of practice, and to publish it. An operation is newly introduced in the therapeutics, of a desperate disease which is rebel to other means. Must it be adopted, and how must it be performed? Must genital organs, though sound and equal to their functions, be sacrificed? Will this sacrifice be compensated by the expedition which would thereby attend the performance of the operation, or will it not produce dangers greater than those of a slower dissection? In short, will the method which I have adopted, or that which Mr. Key has pursued under your eyes, be followed and supported in practice?—*London Lancet, July, 1831.*

4. *Spontaneous Varicose Aneurism.* By JAMES SYME.—Varicose aneurism, or a sac containing blood, and communicating with the trunks of both an artery and vein, is a rare occurrence; and the only instances which have hitherto been recorded either of it, or the analogous condition of aneurismal varix, where the blood passes at once from the trunk of an artery into that of a vein, originated from wounds. The femoral, popliteal, and subclavian vessels, and more frequently those at the bend of the arm, have been thus affected, in consequence of having their contiguous coats divided by some sharp-pointed weapon; but no instance has hitherto been observed of the opening taking place spontaneously, and I therefore think it

right to relate the following case of varicose aneurism, which affected the aorta and vena cava, and occurred without any external violence.

Robert Scott, aged 22, in the beginning of October 1830, began to complain of pain in his back and limbs, throbbing in the epigastric region, and an incessant whizzing noise, which seemed to proceed from the same part. His sufferings became so severe in three or four weeks, that he found it necessary to confine himself to bed, and then came under the care of my friend Dr. Robertson, who soon afterwards requested me to see him. He complained greatly of pain in his back, and coldness of his feet; but what seemed to occasion both him and his friends most concern, was the constant noise that has been already mentioned. On examining the abdomen while he lay on his back, I readily felt the pulsation of a large tumor; but it was not so strong and incompressible as that of an ordinary aneurism, and in the erect posture might have readily escaped observation.

The treatment consisted in the use of all those means which tend to moderate the force of the circulation, but proved quite unavailing. The patient's sufferings became progressively aggravated, and a new symptom made its appearance, viz. œdema of the inferior extremities and generative organs. The swelling of these parts attained a degree that I never saw equalled, and occasioned an extraordinary contrast between them and his superior extremities, which were thin and emaciated. In the latter end of January the patient died rather suddenly, immediately after complaining of a pain at his heart.

After death, the œdema, which had previously been confined to the parts below the pubis, diffused itself over the whole of the body so that when the dissection was commenced by the usual longitudinal incision of the integuments of the trunk, they were found to be distended fully three inches, and a copious stream of serous fluid continued to issue from them, during nearly the whole of the subsequent examination.

In order to expose the disease completely, I removed the thoracic and abdominal viscera, and then traced the aorta from its commencement downwards. Having found an aneurismal tumor seated at the bifurcation of the artery, which adhered intimately to the vena cava and vertebræ, I dissected out the iliac vessels, cut them across some inches beyond their division, and then sawed away the bodies of the lumbar vertebræ, together with the promontory of the sacrum.

On examining more particularly the preparation thus detached, we observed that the tumor was of a flattened oval figure about the size of a large orange; that it adhered to, and had caused absorption to some depth of the bodies of three lowest lumbar vertebræ, and that it was intimately connected with the vena cava, which appeared much flattened, distended, and thickened. It was now suggested that there might be a communication between the aneurism and vein, and on making a small opening into the sac, so as to

evacuate its contents, we found this actually to be the case. Immediately above the bifurcation of the vena cava there was a round aperture somewhat larger than a sixpence, which afforded a free entrance into it from the aneurism.—*Edin. Med. and Surgical Journal*, July, 1831.

4. *Periostitis of the Head successfully treated by free division.*

By Mr. BLACKLOCK.—Mr W. V. aged 24, about eighteen months ago, began to be affected with severe pain in the left side of his head, which has seldom or never intermitted, although there have been daily remissions, or periods of mitigated suffering. The pain is most distressing during the day, and least so when warm in bed. He feels always cold when not in bed, and inclined to be near the fire, where he sits in silence, holding his head occasionally with both his hands. Pulse seldom under a 100, and often much above that number, and of moderate strength. Appetite bad; thirst distressingly urgent; and he can hardly be prevailed upon to resist drinking large draughts of cold water. Tongue some times covered with a white film, but upon the whole pretty natural. Bowels regular. Perspires a good deal in his sleep.

Mr. V. consulted me by letter five or six weeks ago, in which he stated, that he had been attended through the greater part of his illness by two practitioners of eminence and experience, under whose direction he had taken, in large doses, carbonate of iron and sulphate of quinine, mercury and sarsaparilla, and other medicines, with which he was not acquainted. The head also had been leeches and blistered. Having received little or no benefit from these remedies, he went in July last to Dublin, for the purpose of consulting Abraham Collins of that city, who was of opinion that the pericranium was thickened, and recommended its division with the scalpel. This, however, was not done. In my reply to Mr. V., I advised him to try the effect of the arsenical solution, and, at the same, called attention to the recommendation of Mr. Collins as a means of relief. He took the solution in doses of six or seven drops twice a-day for nearly a month without any amendment, and this morning he came to Dumfries to be under my care.

Still suspecting the disorder to be of a neuralgic nature, I again tried the arsenical solution, administering the doses myself, and pushing the medicine as far as I considered safe. I afterwards cupped him on the back of the neck to twelve ounces. His sufferings progressively increasing, he went by the mail to Edinburgh on the 24th Oct., and saw Dr. Abercrombie the same evening, who wrote to me as follows: "After all that has been done without benefit in this distressing case, I have no hesitation in stating to you at once the measure which I would recommend. It is a free crucial incision through the portion of the scalp which is tender to the touch. This seems to be about the size of a dollar, and I would

carry the incisions quite through the pericranium, and dress them so as to prevent adhesion, and let them heal slowly, with free supuration. This will certainly be attended with present relief. Should the benefit not be permanent, I would repeat the incisions more freely, and always quite through the pericranium, and endeavor to keep them longer in a discharging state." Next day Mr. V. returned to Dumfries; and on the forenoon of the 26th, I made a very free crucial incision through the pericranium covering the posterior part of the left parietal bone, and quite traversing the part most tender to the touch. The hemorrhage was profuse. Having ascertained that the pericranium was only partially divided, I drew the scalpel along it, which produced excruciating pain, and a kind of convulsive trembling, if I may so speak, over all his body, although he had not previously complained. The bone appears sound, but, from the acute suffering which attended the division of the pericranium, there can be doubt of that membrane being in a morbid condition. I think it is thicker than usual; and in this opinion I am joined by Mr. McLauchlan, an intelligent surgeon here, who was present at the operation. The scalp, indeed, at the line of division is unusually thick.—10 p. m. Has been quite free from pain since the operation, and uncommonly cheerful.—Oct. 27th. He rested well during the night, without uneasiness in the wound, or on that side of his head; feels a little uneasiness on the opposite side, to which he has not been accustomed. Pulse 100.—4 p. m. The pain has left the right side of his head, where it continued to give some slight annoyance the greater part of the day. He complains now of deep-seated pain in the occiput. No uneasiness near the incision. Pulse 120.—Oct. 28th. Had a good night; feels a little pain in the right side of his head, but not the slightest uneasiness in the left. Says he has not for many months been so exempt from all suffering on the left side of his head as since the operation. The deep-seated occipital pain complained of yesterday evening is gone.

Oct. 29th.—Slept well during the night, and feels no pain whatever this morning.—Oct. 30th. Since yesterday morning, has occasionally had a little uneasiness in the right side of his head, and towards the occiput. Pulse 96. In the afternoon the dressing was removed after a poultice had been applied for a few hours to facilitate separation. The wound which was very open, was discharging sufficiently for the time. The pericranium is extremely irritable, the gentlest touch of the probe causing agony. Does not complain when the probe is pressed against the other parts of the wound.—Nov. 2d. Has been almost entirely without headach since last report. Wound has a healthy aspect, but is still exquisitely sensible at the bottom. When the pericranium is touched, he compares the sensation to a sharp instrument passing through the brain.—Nov. 5th. For the last three days, a little pain has come on toward evening; it is principally felt in the lower part of the occiput, and occasionally shoots as it were through the brain to the left eye. This suffering soon goes off after retiring to bed. There is no uneasiness in the wound, nor in its immediate neighborhood.

Nov. 12th.—Has had no headache, nor uneasiness of any kind since the 5th. The wound is to day quite healed notwithstanding the nicest care has been taken to prevent its closing, by daily filling it from the bottom with small pieces of lint spread with resinous ointment.—Nov. 17th. Continues well, and this afternoon he set off in good spirits for Liverpool. It may be proper to add, that Mr. V. has taken no medicine, with the exception of a little Epsom salt, since the operation.

After Mr. V. had quitted Dumfries about two weeks, I was somewhat disconcerted by receiving from him, on the 5th December, a letter, in which he states, that his headache had returned, and for some days had been so severe as to induce him to think of having the scalp and pericranium again divided. This he ascribed to the accident of having struck his head a few days after returning rather forcibly against a bird-cage suspended from the ceiling. The injury was received near the spot where the incision was made, and caused very acute pain at the moment. A few days after he again came to Dumfries, and put himself under my care with the purpose of having the operation repeated.

On carefully examining the head, however, I found that the suffering was not in the situation in which the parts had formerly been divided, but in the lower part of the occipital region, towards the nape of the neck. In the latter part I introduced a seton, with the view of establishing a thorough counter-irritation; and even since the discharge became copious the pain has seldom or never been troublesome. I conceive, therefore, that since the latter pain has no connexion with the former seat of disease, the crucial division of the scalp was completely effectual in removing the periosteal inflammation, and that the cure is now (14th February 1831) completed.

By a letter dated the 19th current, (May,) Mr. V. informs me, that he removed the seton some weeks ago; and while he states he is in good health, he makes no mention of the return of the original complaint, nor of the pain of the inferior occipital region for which the seton was inserted.

I cannot say whether the second affection, for which the seton was introduced, was connected with the previous pericranial disease. It is, nevertheless, probable, that the blow on the head removed in some measure that morbid action which had been so recently arrested by the incision.

In this manner, therefore, this case, which completely baffled, during the long period of eighteen months, the whole class of tonics, as well as the most energetic treatment by leeching, blistering, mercury, &c. was permanently cured by free incisions.

In the course of the last few years I have met with two cases similar to the above, in women between forty and fifty years of age, which were ultimately treated by incision; and in both instances I found the bone eroded over a space nearly as large as a sixpence. The incisions were healed by granulation, and no exfoliation occurred in either case. The relief, although considerable, and in

the end complete, was by no means so immediate as in Mr. V.'s case.

The same painful affection, no doubt, sometimes attacks the covering of other bones as well as that of the skull. I have met with it on the front of the *tibia*, and in one instance of this kind the patient was a little boy not more than five or six years old, who, as far as could be ascertained, had not received any external injury, and in whom it was pretty evidently an idiopathic disease; an incision through the periosteum at once put an end to it.

I think, with Dr. Crampton, who has written so well upon this subject, that *periostitis*, both acute and chronic, very often occurs unconnected with any specific disease, and in such cases mercury, instead of mitigating, aggravates the suffering. It appears also that this disease is, in its commencement, strictly confined to the *pericranium*, from which it extends, if not interrupted by an incision, to the subjacent bone, and, I presume, ultimately to the *dura mater*. That it proceeds from the *pericranium* to the bone was well exemplified, I think, in the cases of the two women alluded to; for although the bone was bare and a little eroded in both of them, the disease proceeded no further after the *pericranium* was divided; no exfoliation, as I observed, took place. It is now upwards of two years since the last of these cases occurred, and the patients are still living.—*Ibid*.

6. *Tumor attached to the Psoas Muscle*. By MR. WALDRON.—On Nov. 12th, 1829, Mr. W. visited Lieut. H., æt. 38. He complained of constant pain and uneasiness referred to the back, and tenderness on pressure of the third lumbar vertebra; the aspect was sallow, the bowels irregular. Leeches and purgatives were prescribed. On the 15th, Mr. W., finding the patient could only lie on the left side with the knees bent, examined the abdomen and found a fulness in the course of the sigmoid flexure of the colon. He considered the case one of fecal accumulations, and used means adapted to their removal, but without benefiting the symptoms. On the 17th the patient looked very ill, and Mr. W. again examined the abdomen, and thought he felt fluctuation in the fulness. The Lieut. said that he had suffered for several years from pain in the back and loins, that it had been growing worse for some months, and especially so within the last six or eight weeks. We need scarcely mention the treatment employed, as it did no good, and on the 24th Dr. Bowie met Mr. Waldron in consultation. On the 28th the consultants came to the conclusion that the case was one of *psoas abscess*, as the tumor dilated on coughing, and receded considerably when he lay upon his back. The patient sank rapidly and died on the 30th.

Sectio Cadaveris. "On the left side a fulness was visible, extending from the anterior and superior crista of the ilium, to the inner edge of Poupart's ligament, and there terminating with a slight bulge. Upon manual examination after death, a very indistinct fluctuation could be felt. On making an angular incision

from the symphysis of the pubis, extending to the right and left ilium, a quantity of serous fluid escaped; and on the left side, upon cutting through the parietes of the abdomen, and turning them back, the peritoneal covering of the left side was closely united, and could not be detached from a dark-colored tumor which was now partially displayed to view. It appeared to occupy the greater part of the left side of the pelvis; from the close adhesions which had formed between this diseased mass, its peritoneal covering, the colon, rectum, and kidney of the left side, very considerable difficulty was experienced in its dissection, and by no means could it be satisfactorily effected. I first separated and secured by ligature, the large arch of the colon, above where the diseased structure commenced, in two places, and having then divided it, I proceeded to trace the sigmoid flexure downwards, but this I found impossible. The colon throughout, commencing from its sigmoid flexure, was imbedded in an encysted tumor, of a dark color, and when cut into and examined, evidently consisted of coagulated venous blood; the colon and rectum were so closely embedded in, and united to, this diseased mass, that they could not be separated from it; the appendiculæ pinguedinosæ throughout the whole course of the colon, even to some distance above the tumor, extending to its large arch, resembled so many black grapes, and when cut into, were found filled with dark-colored venous blood. These bodies were found so closely adhering to the tumor, that it was impossible to separate them from it. The tumor was situated on, and adhering to, the psoas magnus muscle, extending to, and enveloping the left kidney, and appearing to take the course of the mesentery, filling up the loose fold which retains the sigmoid flexure of the colon, and passing downwards as far as the mesentery extends towards the rectum. It would appear that the mesentery, thickened and condensed by chronic inflammation, formed a capsule for the tumor. The colon and rectum, when cut into and laid open, appeared healthy within. The whole of the intestines were highly vascular, and bore marks of inflammatory action, but more especially the large ones. The liver was of a light gray color; the left kidney was very much diminished in size, and was surrounded by a yellowish substance, similar to pus. The spleen was of a light gray color. A very considerable quantity of fluid was found in the abdomen, which, during the attempts made at dissecting out the tumor, became mixed with the coagulated blood, and added greatly to the difficulty in making a clear and satisfactory display of the parts, and rendered it impossible to discover the source of hemorrhage."

We have seen the same sort of bloody tumor surrounding one kidney. It was like the contents of an aneurismal sac, consisting of dark coagulum in some places, yellowish lamellated coagulum in others. It was of great size, yet the vessel from which the bleeding had occurred eluded our detection. Of the symptoms during life we are ignorant. We suppose that if the tumor, in Mr. Waldron's case, had been of the hematoid character, he would have recognised it as such.—*Medico-Chirurgical Review*, July, 1831.

PRACTICE OF MEDICINE.

7. *On Pulmonary Consumption.* By Professor HENDERSON.—There is so much practical good sense in the following observations, which we find in our Philadelphia cotemporary, that we have made free in transferring to our pages a greater part of the original communication. We have long been of the opinion, that consumptive patients have a prospect of a longer continuance of life, without, than with the use of medicines. Some palliatives will indeed be required to alleviate temporary symptoms; but this is all.

1. What has been the result in those cases of tuberculous phthisis which have been subjected to deliberate and judicious medical treatment, *unconnected with free exercise in the open air at all seasons?*

The answer is, that my long and extensive experience does not afford one case of recovery.

2. Has the medical treatment, *without active exercise*, materially protracted life in any cases?

The answer is, that it is very doubtful whether one life has been materially protracted.

3. Have bleeding, digitalis, mercury, prussic acid, tartar emetic, confinement to stove rooms, blistering, emetics, cicuta, ipecacuanha, inhalations, liverwort, have any of these, *without active exercise*, arrested, averted, or cured one case?

Confining this answer to tuberculous phthisis, and to my own experience, the answer is in the negative.

4. Has any one case been averted, arrested, or cured, the successful result in which has not been owing to exercise, exertion, to free exposure to weather at all seasons, in walking, riding, and sailing?

The answer is, that this course of habits seems to have been the only preventive or curative agent.

5. And yet another question recurs, viz. in reviewing my practice, is there not reason to believe that many remedies so much relied on, and so authoritatively commended, have been either positively or negatively injurious, if not both?

The answer to this question may be inferred from what follows. The subject should be cautiously investigated, but requires most serious consideration.

If the opinions and experience of Dr. Parrish and others, and if the cases just detailed prove any thing, they demonstrate this, that many cases of phthisis that were in progress of medical treatment, and were doing badly; on discontinuing the medicine, and in relying on active exercise and plain nutritious diet, did well. It would appear that a continuation of medical treatment in other cases did no good; the disease terminating certainly, and often speedily, in death. This was probably owing to the intractable nature of the disease preying on constitutions unable to withstand its ravages. We should, however, inquire and reflect seriously, whether remedies such as are used in consumption, if they be not beneficial, be not injurious. It is not probable that bleeding, mercury, digitalis,

prussic acid, &c. will be negative in such a disease and in such constitutions as the phthisical have. So uniform is their failure to cure, and so frequently are they injurious, that the routine of prescription is formal at best, and hazardous in many instances. This formality, this routineism is the bane of improvement in our science; and Dr. Parrish deserves the thanks of the profession for the firmness and intelligence with which he has assailed it.

If it excite surprise when I say that not one recovery from phthisis has occurred in my experience, let it be observed that allusion is made to *tuberculous* consumption. Chronic bronchitis, catarrhal phthisis, and that from ordinary suppuration or abscess in the lungs, are not in view. I have often seen recoveries in these cases, and have reasonably ascribed the recovery to medical treatment. Not so with tubercular phthisis. In this fell disease, if a remedy there be, it is yet to be discovered; and he is a wise practitioner who avoids the *lædientia* in scrofulous consumption. This form of phthisis is equally fatal wherever it exists; and where is it not? If in the admission that the remedies used may have been positively injurious, there appear too much candor, it is replied, I have followed the best lights that have been supposed to gleam along the dark path of tuberculous phthisis.

Experience has long since taught me that the writings of Dr. Rush on pulmonary consumption are not so much to be relied on as his precepts and practice in many other cases. The peculiar action of tubercular disease in the lungs, arising as it does from strumous complication, sets at nought the simplifications of ingenious hypothesis, and much more the boldness of systematic practice. Consumption consists in something more than the action of chronic pneumony, and invariably baffles the depletory measures directed to reduce that action. The origin, increase, and softening of tubercles, involve more in practical consideration, than the mere question whether or not they are the result of inflammation. It is in the incipient stage of tuberculous phthisis that the practice of Rush is to be deprecated. It is to this incipient stage that the plan revived by Dr. Parrish is applicable, though not a few cases are on record in which the plan was advantageously pursued in more advanced stages. One of my patients appeared to be in confirmed consumption, and yet has been apparently preserved by this hardening system.

There is one thing to be considered in the treatment of consumption, and it is very important. Take a patient threatened with this disease, or with it formed; confine him to his room; deny him active exertion; bleed him frequently; put him on low diet; prevent unreserved intercourse with his friends; give him mercury, digitalis, cicuta, hydrocyanic acid, and you surround him with a gloom that has most positive influence on his nervous system. Nervous depression and irritation derange, irritate, enfeeble, vascular action, especially in the capillaries, and here is a superadded and exceedingly operative difficulty. It is vain to talk to patients about exercise with dumb bells, &c. in stove rooms. Patients

lose their energy by the confinement, and many lose entirely their elasticity and hope, in the fear that this course of practice and seclusion arises from the belief that consumption is formed, and therefore incurable. In all chronic cases, mental energy and cheerfulness are conspicuously subsidiary in treatment; without them our mercury, and foxglove, and bleeding, do harm rather than good. This system then of confinement so impairs nervous energy as to act unpropitiously on the bodily powers, on the capillary circulation in the abdomen, on the skin, and above all, in the lungs themselves, favoring obstructions and sluggish circulation there. I have heard a delicate female say, with great firmness, "If I have to live but two years, let me rather enjoy myself than be immured;" and pursuing her own course, she lives and does well.

How different are the effects of accustomed exercise and habits on the nervous system, and by consequence, on general functional action. How exercise tends to equalize and invigorate capillary circulation, and thus to prevent local obstruction, and if used with judgment, to remove it when formed. Exposure to cold, is supposed, in phthisical and other cases, to act unfavorably in two ways; on the skin generally by constricting it, exciting sympathetically the *irritatio introversia*; and secondly, by direct impression on the air-cells of the lungs. The first mode of operation can be easily guarded against, by carefully adapting dress; while the injury from direct contact of air has always appeared to me to be hypothetical. Doubtless if a person habituated to stove rooms too suddenly inhales a cold atmosphere, it may be prejudicial; but this sudden change is not here considered or desired.

An objection to exercise is by some said to be, that it so hurries the circulation of blood through the lungs as to be prejudicial in tuberculous phthisis. Of this I have strong doubt. Too great exertion may do so; but this is not what we wish the patient to make. On the contrary, moderate exercise regularly pursued on horseback or in a carriage, has to my knowledge reduced an irritable and frequent pulse in disease of the heart, to moderate and healthy action. I am sure that so far as exercise favors capillary circulation, it accomplishes an important object in the incipient, or even in the more advanced stages of phthisis.

It has been observed by Dr. Parrish, that the practice sanctioned by his cases and by mine is not new. It is a practice which should be judiciously attempted and fairly tried by cautious perseverance. Let the patient keep the feet dry and warm; let him be so well clothed as to prevent sensations of chilliness; let him avoid those severities of weather that a man in health would shun; but after this let him take exercise in the open air, at first in the mode of gestation, then on horseback, and finally by walking. In winter let him go to a climate where there will be the least interruption to his active habits. In this case physic may be needed to remove painful incidental symptoms, and what this physic should be will be obvious. It may be that these habits, and the courses of remedies usually adopted, have been too much separated under the idea of their incompatibility.—*American Jour. of Med. Sciences*, Aug. 1831.

8. *Case of Apoplexy of the Spinal Cord.* (*Archives Générales de Médecine.* Janvier, 1831.)—In the Number of this Journal for July last an account was given of that rare disorder, apoplexy of the spinal cord. We are now enabled to add another case of the same nature, which occurred to M. Breschet in the Hotel-Dieu at Paris. It was complicated with inflammation of the kidneys and bladder.

The patient was a locksmith, twenty-nine years of age, and of sound constitution. He was seized suddenly with intense coldness, particularly in the back and loins, succeeded by pain of the belly in the region of the kidneys, and then by retention of urine, constipation, and weakness of the right leg. On his admission into the Hotel-Dieu four days afterwards, there was swelling and tenderness of the belly, particularly in the region of the bladder, obstinate constipation, loss of the power of motion alone in the right leg, and of sensation only in the left leg, as well as in that side of the trunk as high as the nipple, a natural state of the pulse, whiteness of the tongue, integrity of the mental faculties. On introducing the catheter, much clear and red urine was discharged. On the sixth day stools were discharged involuntarily. On the seventh there was some fever and headach, and in the evening frequency and fulness of the pulse, with increased pain in the hypogastrium and kidneys, involuntary stools, continued retention of urine, and vomiting. Vesicectomy was now resorted to, and followed immediately by leeches on the belly; but during the next two days there was no material change, except that incontinence had succeeded retention of urine, as the man refused to submit to the pain caused by the catheter. On the tenth day two cauteries were applied to the loins, and next day two moxas higher up. On the evening of the eleventh day the urine was bloody, and the pain in the hypogastrium and region of the kidneys was much increased, especially in the right side, where the slightest touch was insupportable. On the twelfth day the symptoms were worse, and the catheter brought away a quantity of fetid urine loaded with pus. No material change took place for seven days afterwards. But on the nineteenth and six following days there was a regular febrile paroxysm except on one day. On the twenty-sixth the palsy began to affect the chest and upper extremities; eschars formed on the sacrum, trochanters, and cauterized parts of the back; and in eight days after that he expired under dyspnea and great exhaustion.

On examining the spine, the bones were found injected and blackish, and the membranes of the cord were red, especially in the region of the dorsal vertebræ. About the level of the eighth and ninth dorsal vertebræ there was observed a blackish, or slate-colored appearance, at the anterior and posterior roots of the right dorsal nerves; and on the membranes being removed, this dark tint was found to extend from the inferior to the superior bulb of the cord, and to be more distinct on the right than on the left side, and also in the posterior than in the anterior region. A great number of veins in the neighborhood were gorged, and the discoloration was traced to blood extravasated into the cineritious substance, and

partly also into the white texture of the cord. On cutting the cord transversely, a large drop of blood formed on the surface of every section. The kidneys were twice the natural size, the pelvis and ureter of each dilated, the mucous membrane red, and covered with lymph and ulcerations. The urine contained in the kidneys was purulent, pus could be squeezed from the mammillary protuberances, and the substance of the kidneys was infiltrated with the same fluid. The renal veins presented many red spots internally, but did not contain pus. The bladder was thickened, its inner membrane red, with black patches, ulcerations, and softening. The spleen presented several cavities filled with matter.—*Edin. Med. and Surg. Journal, July, 1831.*

9. *Probable Dislocation of the Heart.*—By Dr. WILLIAM STOKES. —Mr. B——, aged 21, had enjoyed uninterrupted health until the 7th of May, 1822, when he was severely crushed between one of the arms of a water-wheel of great size, and the embankment on which the axle was supported. Some of his companions had been amusing themselves by entering between the arms of the wheel, and causing it to revolve by their weight; the wheel had been for some time stationary, and he was in the act of following his companions, his legs being already within the body of the wheel, when it revolved. He was thrown on his face upon the embankment, and received a blow from the arm of the wheel, in a line running from the inferior angle of the left scapula, to the top of the right shoulder. On its rebound, he fell within the wheel, from which he was immediately extricated. He remained for upwards of three hours in a state of complete insensibility.

As soon as an examination could be made, the following injuries were discovered:—Two ribs in the lower portion of the left side, the right clavicle and humerus, and the fifth, sixth, and seventh ribs on the right side, were broken. The right side of the face and chest was emphysematous, and there was complete paralysis of motion in the right arm, with considerable loss of sensation. The patient felt great pain in the right side of the chest, *with a sensation as if a foreign body preventing respiration had been introduced into the right lung*; the pain was accompanied by violent throbbing and heaving; and it was soon discovered that his heart was pulsating at the right side of the sternum. He had a short dry cough, but experienced no hemoptysis, and there was no pain or other symptom of pleuritic inflammation at the left side.*

On the day of the accident, free bleeding was twice performed for the relief of the violent pain of the right side, bandages were employed, and in about two days the subcutaneous emphysema disappeared. During the next month he remained in bed, laboring

* On this point, so important in the diagnosis of the lesion, the patient is perfectly clear. He states expressly, that since the accident all the attacks of pain have been on the right side.

under a short dry cough, always productive of great aggravation of the pain of the side, which on two occasions was so violent, that it was necessary to use venesection. The blood was uniformly inflammatory. At the end of the month he was able to get out of bed, but during the next eighteen months he experienced frequent returns of the pain, calling for the employment of the lancet. The paralysis then began to disappear, and the use of the arm was gradually restored; at first he could only bend the limb, but was unable to preserve it long in the flexed position. He then returned to his studies, but found that he could not read for any length of time, from defective vision, the letters appearing like black lines, though he could still distinguish objects at a distance nearly as well as ever.

From that period to the present time his symptoms have been the following:—The heart continued to pulsate on the right side of the sternum, the pulsation being generally strong and aggravated by mental emotion, exercise, or the occurrence of pain in the side. He never had orthopnea, but always experienced great difficulty of breathing on exercise, or when he attempted to lie on the left side. The cough has remained ever since, being always worse in winter. Any unusual exercise, such as rapid walking, has invariably brought on a violent fit of coughing, which is preceded and accompanied by a peculiar mawkish taste, a sensation which remains for some time after the cough has subsided. From the first he has found that if the right hand be plunged in cold water he experiences a strange sensation, which passes up the arm, and is then felt within the right side of the chest; and at the same time the arm is spasmodically brought across the front of the thorax. Hot water has produced the same effect, but not so violently. He also found that any cold substance applied to the right side of the chest produced an extreme feeling of suffocation; and hence on his attempting to bathe in cold water he has always been forced to return immediately.

During the first three years from the receipt of the injury he found that the use of the smallest quantity of meat invariably brought on vomiting in about a quarter of an hour after it was swallowed; the same effect was produced by other food when taken in large quantity, and ever since that period vomiting always follows the use of food, if taken at a time when the dyspnea is urgent. The act has always been productive of great pain, with a sensation of straining in the right mammary region, and considerable excitation of the heart's action. The pain and straining subside soon after the vomiting is over, but the heart has always continued to palpitate strongly for some time.

His appetite has varied according to the state of his respiration, and hence has been better in summer than in winter. Certain articles of food and drink produce a great oppression in the chest, with wheezing respiration. Those which he particularly specifies are milk, wine, gum, and sugar. Any article of food or drink taken in quantity invariably produces dyspnea and palpitation. Since the accident he has every winter experienced several inflammatory attacks, in which he suffers from violent pain in the *right side*, with

great increase of dyspnea and palpitation; the tongue becomes foul, and he is affected with thirst. These attacks are only to be relieved by bleeding, and he now thinks he has been bled upwards of fifty times. The blood has been always buffed and cupped; and it is a remarkable circumstance, that syncope has never been produced, even after the loss of so much as thirty ounces of blood at a time. These attacks generally last for a week; but in last November the accession of pain continued for three weeks, which is the longest that he recollects.

In the year 1829, he was advised by an eminent practitioner in this city to try the effects of digitalis. From this remedy he experienced considerable relief, and gradually increased the dose until he could take from six to eight grains of the powder, in a single dose, without the slightest inconvenience. *On one occasion he took so much as ten grains*, and he assured me, that after using the remedy in the dose of eight grains every night for the space of three months, his pulse was never below 80; its effect was constantly to relieve dyspnea and diminish palpitation.

At present, when not laboring under any aggravation of symptoms, his appearance does not differ much from that of a person in the enjoyment of good health. His habit of body is spare, but muscular, and the countenance is not expressive of distress. He has a hard sonorous cough, with some mucous expectoration in the morning. In his ordinary state the number of respirations is about thirty in the minute, but this is not the case after exertion or an exacerbation of the bronchitis. Indeed, on the morning when I first saw him, his breathing was like that of a person in an advanced stage of laryngitis; but he then had an increase of catarrh, and had walked some distance to my house. When he does not take digitalis, the pulse is generally between 100 and 120, regular in strength, and never intermitting but when he uses the remedy. Its usual frequency is between 80 and 90.

Having stripped the patient, I made a careful examination of the chest. The right shoulder is depressed, but the right side inferiorly is dilated more than an inch.

The left side of the thorax sounds perfectly clear, even to its most inferior portion, and in the situation naturally occupied by the heart. Respiration of the puerile character and mixed with some bronchial rales, is to be heard over the entire lung, and is as distinct in the mammary region as in the other portions. The sound of the heart is scarcely audible in the upper part of this side, *but neither its sound nor impulse is perceptible below the mamma.*

The upper portion of the right lung sounds clear, but from the fifth rib downwards there is complete dulness, and here the integuments are exquisitely sensible. In the upper portion, both anteriorly and posteriorly, the respiratory murmur is of the same character as in the opposite lung, but from the fifth rib downwards it is wanting, except along the spinal column, where it can be heard feebly. There is no bronchial respiration or resonance of the voice.

The pulsations of the heart can be felt and seen in the right mam-

mary region between the sixth and seventh ribs, and within an inch of the sternum. When not over excited, the sounds of the heart are almost natural, hardly different from those in the healthy state. The impulse precedes the pulse at the wrist by an appreciable interval.* There is no sign of valvular disease.

That the heart is displaced in this case does not, as it appears to me, admit of the slightest doubt. Now the circumstances hitherto recognised, productive of this state of parts, are :—

1st, Congenital malposition.

2d, The existence of an extensive empyema of the left side.

3d, The growth of tumors in the left cavity of the chest.

4th, Pneumothorax of the left pleura.

5th, Dilatation of the air-cells of the left lung.

In addition to these, we have two other sources of displacement which are much rarer, hernia of some of the abdominal viscera through the diaphragm, and aneurism of the abdominal aorta,—a cause first signalized by Dr. Graves and myself.†

But the displacement in this case can be easily shown to depend on no one of these causes. The patient is perfectly clear on the point, that previous to the accident, he often felt his heart pulsating in the natural situation; and he was the first to point out to his friends that the pulsations occurred at the right side of the sternum after the injury. I questioned him most minutely on this subject, and he assured me that he frequently, after exercise, used to place his hand below the left mamma to feel his heart beating. Add to this the excellent state of health which he enjoyed previous to the accident, and we cannot suppose that a congenital malposition could have existed. The great rarity of such an occurrence must also be taken into consideration.

I am not aware of any case in the records of modern medicine, in which the symptoms of congenital malposition of the heart in the adult have been observed. The cases detailed by Lancisi, where pulsation occurred at the right side of the chest, were examples of dilatation of the right cavities of the heart. Riolan, however, details two cases of pulsation at the right side of the sternum, in which the patient suffered no inconvenience; but the true nature of these cases is not known, while those mentioned by Senac and Bonetus, are examples of effusion into the left pleura.

That the cause of displacement in the present instance is neither a fluid, solid, nor aeriform collection in the left pleura, a diaphragmatic hernia, nor an aneurism of the abdominal aorta, is at once proved by the examination of the left side by auscultation and percussion. I may remark, that a case more illustrative of the importance of these modes of diagnosis could hardly be found. It might be supposed by some that the pulsations at the right side of the ster-

* See a paper by myself and Mr. Hart in the *Edin. Med. and Surg. Jour.* for October, 1830; also, Dr. Corrigan's able paper in the *Irish Medical Transactions* of the same year.

† See *Dublin Hospital Reports*, vol. v.

num were produced, not by the heart, but by an aneurism of the descending thoracic aorta ; but this opinion I think untenable, as we know that, when an aneurism of the descending portion of the aorta gives a double pulsation, it must be of great size, so as to press against the heart.* The tumor presenting on the right side, the heart would be pushed strongly against the left ribs, which is not the case here ; and I may remark farther, that in such cases we can always feel two separate pulsations, one of the aneurismal tumor, the other of the heart,—a circumstance which is wanting in this case.

We must then admit, that this is an example of dislocation of the heart, with rupture of the pericardium and right pleura,—a supposition which appears to me to agree perfectly with the history of the case, and the present state of the patient. Thus we have an example of the displacement of the heart from a cause not hitherto recognized. From the history of the case it appears highly probable that the patient has suffered under repeated attacks of pleuritic inflammation of the right lung. A question now arises, What is the actual state of the lower portion of the right thoracic cavity ? Connecting the frequent attacks of pain with the absence of respiration in the inferior portion of the right side, it becomes possible that a circumscribed empyema may exist ; but the presence of the heart in the right side of the chest, under such peculiar circumstances, of course renders this supposition problematical. As to the dilatation of the side, this may be produced by the heart itself.

The power which the patient has acquired of bearing such great doses of digitalis is very remarkable. Of course much of this must be attributed to the acquired habit from its long-continued use ; but in his case it will be seen that even after taking the remedy for a length of time, the pulse was not brought under eighty beats in the minute. The state of irritation of the heart will explain this. How far its displacement is concerned is a matter for future investigation. But the most singular circumstance connected with this extraordinary case, is the fact of the patient, after so dreadful an accident, having lived so long and enjoyed a tolerable state of existence. This renders it probable, that if hypertrophy of the heart exists, it must be slight—an opinion which is borne out by his state at my last examination, when, although he had not used digitalis for many days, the action of the heart was perfectly tranquil.—*Edin. Med. and Surgical Journal*, July, 1831.

10. *Spasm of the Colon*.—Mr. LYON has published some observations on this subject, in the April number of our cotemporary, the LONDON MEDICAL and SURGICAL JOURNAL. The complaint, Mr. L. observes is more particularly incidental to females, from their inattention to their bowels. The symptoms are these : After constipation, there

* See Dublin Hospital Reports, vol. v.

are paroxysms of pain, rising into violent spasms, with remissions, but not complete intermissions. The pain is referred to the transverse arch and sigmoid flexure of the colon. The abdomen is flaccid—pressure relieves the pain—and nausea is sometimes present. The tongue is usually moist and white, the pulse rarely beyond 85, full, and compressible. There is little thirst, or increase of temperature on the surface. After a day or two, a purging comes on, and the disease is commonly treated as diarrhea, though the cause, our author thinks, is scybala. The treatment which he has found most successful, consists in the administration of purgatives combined with opiates—for instance, a black draught with eight minims of laudanum every four hours till the stools put on a healthy character.—*Johnson's Med. Chirurgical Review, July, 1831.*

MIDWIFERY.

11. *Alleged case of Pregnancy.* By Dr. ELLIOTSON.—We are reminded by this case of something very similar that occurred in one of our public charities. But in our case the attending physician was not quite as clever as Dr. E. in his diagnosis. He never suspected the true cause of the *dropsy* until his hydragogues and diuretics developed it, to his great astonishment. The metastasis from the internal cavity to the arms and breast, was a phenomenon quite astounding and unexpected at the next daily visit to the girl.

“When I came to the hospital on Thursday, I found one of my beds appropriated to a young woman with a large abdomen, who said that her doctor, Dr. Fiddle, had told her she had got the dropsy, and had better come here to be cured.

“Now, when I was a pupil, I saw a very sharp, clever man, admit two cases of women with beg bellies, and prescribe for them squills, acetate of potash, and other antihydropsics; and before the week was out each of these persons had a little one sucking at her side. However, this would have been a very disagreeable and discreditable circumstance now, in these days of diagnosis, and therefore I condescended, (or my physicianship condescended,) in the case of this patient, to use mechanical means for the purpose of investigating her state; and I not only inquired whether there was fluctuation or not, as physicians are allowed to do, and ascertained that there was none, but I had her undressed, as I make it a rule in all cases of affections of the trunk, whenever there is a suspicion of organic disease. I believe it is considered by some to be derogatory to the dignity of a physician to use his hands or his ears; but as nature has given us both ears and hands, for one I am very grateful for the gift, and whenever the phenomena of touch or sound occur, I consider them equally worthy of notice as phenomena of sight, or as details given, and despise not the assistance afforded me by the Creator. I therefore mechanically examined

the whole abdomen of this young lady, and found there was a considerable tumor of the abdomen, quite hard; and the tumor grew broader and broader upwards, till at the commencement of the epigastrium, I felt it well defined, its edge rounded off; and its shape something like a segment of a circle. On looking at the breast, the areola appeared of the darkest brown. All this, of course, made me very suspicious. At one part of the tumor, the upper part, near the right hypochondrium, I found a projection, smooth, firm, and globular, as if a lobule was there. While my fingers were upon it, however, it disappeared—away it went. On applying my fingers a second time I found it again, but more in the centre; then it receded, and I felt it lower down. While I was feeling it there, it gave such a kick that I started and withdrew my hand. The nature of the case was perfectly clear, but I said nothing about it; and asking the maiden how long she had had the dropsy, she replied three months. I asked her if she still menstruated, and she replied that nothing of that kind had happened for ten months. I asked her if she was ever sick, and she replied every day, and all day. I think it very likely, from all this, and what I have seen in other women, that she really had no idea of being pregnant. I believe that many women become with child, and are not at all aware of it; not that they are not aware that they have taken all the proper means for getting into that state, but that they have no idea that those means have taken effect. It is so common for women to indulge, and think no harm can come of it, because so frequently no harm does come, and they perhaps themselves have so long indulged with impunity—it is so common for women to suppose that no harm can come to *them* from it, and not to know that in these matters, sometimes a very little goes a great way. I know that some are impostors, and come to the hospital declaring themselves not with child while they know that they are, and protest and pretend they are so virtuous that the thing is out of the question—quite impossible; yet I do believe that many are deceived.”—*London Lancet*, February, 1831.

12. *Puerperal Peritonitis*.—(*Lancette Francaise*.)—X—, æt, 28, of sanguine temperament, and sufficiently strong constitution, was admitted on the 1st of March. She complained of violent pains, and the membranes had already been ruptured. The neck of the uterus was yet very high, the dilatation trifling, and the circumference about two lines in thickness. These phenomena announced a long and painful labor. Two baths were given her on the 15th, and in the evening the orifice of the uterus was only from three to four lines in diameter, but its edges were very thin. At length, after another bath, the pains became stronger, and after three days' labor, on the 16th, at 6 A. M. she was delivered of a healthy well-formed child. *The placenta was allowed to remain until naturally expelled at the end of ten hours!*

Vespere. Feverish, skin hot and moist; lochia abundant.

17th. Rigor during the night ; skin hot ; pulse frequent, small, tight ; abundant diaphoresis ; abdomen very tender to the touch, considerably swollen ; womb continues enlarged. In the evening the skin was still hot but dry, and the belly continued painful on pressure. Lochia still copious. *She was bled to three cupfuls ; the blood showed the buffy coat.* Diarrhea supervened soon after the bleeding, and continued all night, with aggravation of the abdominal pain, especially in the hypogastric region. *Forty leeches were applied to the abdomen, with fomentations.*

18. Less heat of skin, but belly continues tender ; pulse frequent and small. *Bath ; fomentations ; low diet !*

In the evening it was found that she had irregular shiverings during the day, with exasperation of the abdominal pain ; pulse of extraordinary frequency, 150, small, light, and abdominal. The tongue dry ; vomiting of yellow bitter matter ; intense thirst ; excessive hypogastric tenderness ; lochia scanty ; diarrhea ; respiration anxious ; breasts flaccid. *Thirty leeches to the anus ; bath and fomentations !*

19. Worse ; belly painful on the least pressure, tense, and meteoric ; nausea and vomiting ; face contracted ; pulse small, weak, and compressible ; lochia suppressed ; purging continues. *Bath ; fomentations !*

Evening. Same symptoms. *Forty leeches to the belly ; bath and fomentations.*

20. Appearance rather better ; but the pulse, though less frequent, still continues small and abdominal ; the belly tense and tender ; delirium of the cheerful kind, the patient fancying herself in excellent health, prattles continually, and demands food. *Two baths ; emollient fomentations ; cataplasm of bran and starch.*

In the evening she seemed rather better.

21. Restless night ; delirium continues ; countenance much altered ; eyes sunk and haggard ; abdomen distended, flatulent, and acutely tender. *Two blisters to the calves of the legs ; mercurial frictions over the abdomen ; a bath.*

22. Has not slept since previous report ; delirium of the same character continues ; belly free from pain, but tense and slightly meteoric ; pulse frequent, small, and tight ; skin natural ; tongue red and dry ; two liquid stools ; no shivering ; respiration regular. *Mercurial frictions to the belly ; baths and fomentations ; low diet and soothing drinks.*

23. Countenance greatly changed ; eyes sunk, hollow, lustreless ; tongue moist ; nausea ; belly tense and meteoric ; diarrhea ; lochia absent ; respiration frequent, costal, anxious and short ; pulse frequent, small, weak, and abdominal ; insomniation ; skin of normal temperature. *Death at three P. M.*

Dissection.—*Abdomen ;* sero-purulent extravasation charged with numerous albuminous flakes, some of which adhered to the surface, and effected the union of different folds of the intestines.

Uterus.—Tissue white and easily torn, traversed by numerous veins, five or six of which contained pus. *Some remnants of the pla-*

centa existed in the usual situation. The great pelvic and abdominal veins were free from disease.

The spleen and liver were healthy in appearance, and the mucous coat of the digestive tube was pale and softened, especially at the stomach. In the chest there were some old adhesions of the right pleura, and the lung of the same side was rather indurated. The left lung and the nervous system offered no peculiar appearance.—*London Lancet.*

13. *Premature Births.*—Mr. J. GREENING, of Worcester, details in the *Midland Medical and Surgical Reporter* for February last, the case of a female delivered at the sixth month. The child was so small and feeble, Mr. G. says, that he requested the nurse to put it by, not thinking it possible for it to live; nevertheless it did so.

This same woman was subsequently delivered between the seventh and eighth month, and the child of which she was delivered this time, also lived.—*American Jour. of Med. Sciences, Aug. 1831.*

THERAPEUTICS.

14. *Colchicum in Cholera.*—By Mr. TAITE.—The subject of cholera, from a dread of its appearance in this part of Europe, seems to occupy much public attention; it therefore becomes the duty of every professional man, to give his experience in the disease, so formidable in its nature, and so intractable in its management. With this view a communication was made to the editors of the *Edinburgh Medical Journal*, in December last, by a young friend of mine, stating the successful use I have made of the SATURATED TINCTURE OF COLCHICUM in many cases of the milder form of the cholera, as it appears in this part of Europe; but as the paper has not been acknowledged, I beg, if you think it of sufficient importance, that you will, through the medium of your *Journal*, suggest it as a remedy worthy of trial in the more aggravated forms of the disease, as it appears in Asia, and lately in Eastern Europe. It was administered in doses of from SIXTY to EIGHTY DROPS; and in no case did it fail to produce immediate, decided, and lasting benefit; except in that of an infant, which was dying when I visited it first. I think it a valuable remedy in case of indigestion, with vomiting and purging, as well as in diarrhea proceeding from a deficiency or total want of bile; all which appear to be modifications of the same disease. There is at present residing in your neighborhood a most respectable family who can vouch for its efficacy—six members of which, in common with many other inhabitants, both English and French, residing on the same side of a street in this city, were seized on the same night some time in September, 1829, five of whom were relieved by this remedy, and up and well in a few hours, after a dose

of castor oil—while two others, mother and daughter, who would not consent to take it, were confined several days. I will not enter into any theoretical speculations on the subject, but simply state, that it was in fine taken by myself, as a probable remedy, and powerful stimulus in exciting the liver, when in a state of great torpor, and aggravated by exposure to a cold evening air, in the vale of Taunton, after a fatiguing hot ride through part of Devonshire, during a sultry day in the month of Sept. 1825. My attack was ushered in by cold chills and sensations similar to those of a slight paroxysm of intermittent, followed, on awakening four or five hours afterwards, by frequent eructation of offensive gas, vomiting and purging. Being in the habit of taking this tincture to regulate the biliary secretion, which was deranged by a long residence in the West Indies, I happened to have a phial in my chaise-box, and took about sixty drops, by the light of the street lamp. This dose arrested the symptoms in less than fifteen minutes, and enabled me, after a dose of Seidlitz in the morning, to proceed on my journey. A similar effect followed an attack the next autumn at Liverpool, where much of the disease at that time prevailed. I communicated these circumstances to a friend of mine, at present on the civil establishment at Madras, who not being a professional man, will no doubt have allowed them to escape him. He was, however, the father of the family above alluded to.—*Medico-Chirurgical Review*; July, 1831.

15. *Iodine in Cutaneous Diseases.*—DR. JEFFRAY, of Liverpool, has stated in the *Lancet*, that he has administered the tincture of iodine in various cases of psoriasis, and the different varieties of herpes, “with almost never failing success,” as well as in lepra vulgaris. In the latter case the diluted unguent. hydrarg. nitrat. was also employed. We observe that Dr. Jeffray begins with ten drops twice a day, increasing the dose to thirty drops night and morning.—*Ibid.*

16. *Observations concerning the Bark of the Root of the Pomegranate-Tree, as a Remedy against the Tape-worm.* By RICHARD PEARSON, M. D.—In consequence of the strong testimonies recorded by various medical practitioners attached to the East India service in favor of the bark of the root of the pomegranate-tree (*Punica Granatum*) in cases of tape-worm, I was induced about two years ago to prescribe it to several patients who had voided portions of that worm, and who had previously taken the oil of turpentine and other anthelmintics, with little benefit. I prescribed the powder of the dried bark of the root, (as recommended by Mr. Breton in the *London Medico-Chirurgical Transactions*, vol. xi.) in doses of from ʒss. to ʒii., to be repeated every hour until it should produce some

powerful effect ; but to my disappointment, in one case it produced no sensible effect whatever, and in two other cases small portions only of the worm came away after its exhibition. The remedy has proved equally unsuccessful in the hands of my friend and colleague, Dr. Eccles, senior physician to the Birmingham General Dispensary. The bark prescribed by both of us was obtained from London by the principal druggist in this town. To account for these failures, I am led to suspect, either that the bark which we used was from the root of a pomegranate-tree of British growth, or that it was some other bark in lieu of the pomegranate-bark. If it were the bark of a pomegranate-tree cultivated in this country, it is easy to account for its want of efficacy ; for, to possess its medicinal properties in full perfection, the pomegranate-tree must grow *in a hot and dry climate*. When cultivated in the gardens of our cold and humid climate, it degenerates—it becomes inert. But perhaps the bark prescribed by Dr. Eccles and myself was not the genuine drug ; for Professor Richard of Paris states, that the bark of the barberry (*Berberis vulgaris*) is sometimes fraudulently substituted in commerce for the pomegranate-bark. Under these circumstances, I would suggest that no pomegranate-bark except that which shall be imported from the East Indies, be offered for sale by the druggists. Mr. Breton has shown that this bark loses nothing of its virtues by drying ; hence it may be easily sent from India reduced to powder, and put into bottles well corked and sealed. It is much to be wished that some able chemist would undertake an accurate analysis of this bark. At present, we only know that it contains tannin and gallic acid, with some wax ; and two sorts of saccharine matter,—one partaking of the nature of sugar, and the other of the nature of mannite, (Mitouart, Journ. Pharm. 1824 ;) but none of these principles—not even tannin and gallic acid—will account for its anthelmintic action, nor for its effect on the cerebral system, when administered in full doses, giving rise to vertigo, fainting, &c. I strongly suspect that the pomegranate-bark contains a proximate principle—probably a peculiar alkaloid—in which its vermifuge power resides.—*Edin. Med. and Surgical Journal*, July, 1831.

17. *Case of the successful treatment of Snake-bite by cupping-glasses.* (*Transactions of the Medical and Physical Society of Calcutta*, vol. iv.)—Mr. Clarke, assistant-surgeon in the Bengal service, has related the following instance of the successful application of Dr. Barry's treatment against the effects of poisons introduced into an external wound.

A fine healthy youth, fourteen years of age, was bitten at 10 P. M. near the bend of the right arm by a snake, the species of which could not be ascertained. He was immediately conveyed to a set of "Snake-Doctors," who, after practising their quackery for five hours to no purpose, directed him to be taken to a European surgeon. Mr. Clarke, who saw him immediately after the native doctors gave

him up, found him affected with stupor, insensibility, laborious breathing, extreme feebleness and rapidity of the pulse, great expression of anxiety and distress, constant efforts to expel frothy matter from his throat, and inability to articulate. The wound was situated a little below the bifurcation of the vein at the bend of the arm, extended horizontally half an inch under the skin, and a slight elevation was perceptible over its course, which was paler than the surrounding integuments, so as to present the appearance of a splinter of fir under the skin. The adjacent integuments to the distance of two or three inches were tense and painful. The wound was immediately scarified and a ligature applied above the elbow. At the same time two attempts were made to administer ammonia, but without success, as the muscles of deglutition were thrown into violent convulsive action, producing increased difficulty of breathing. Mr. Clarke then resolved to try the effects of cupping-glasses, and immediately applied one in the usual manner. After it had been applied for an hour and a half, with occasional short intervals, a manifest improvement had taken place. This was seven hours after the bite. He was more composed, and expectorated less; the pulse was fuller, and the sense of suffocation less urgent. The cupping-glass was now removed, as very little blood had been drawn by it; and ammonia was administered from time to time, but at first with difficulty. In the course of another hour he could stand up, and soon afterwards he was able to walk. Twelve hours after the bite, the bandage having been still kept on the arm, he complained only of drowsiness and difficulty in articulating. In twenty hours the drowsiness continued, the eyes were dull and injected like a person recovering from intoxication, and there was indistinctness of vision. The arm from which the ligature had been removed a short time before, was painful near the puncture, and on the seat of the ligature. Next day he was quite well, after a long and refreshing sleep.

18. *Carbonate of Iron in St. Vitus' Dance.*—In the course of some remarks by Dr. Elliotson on the disease mentioned, he relates two cases, and then observes respecting the treatment: "You will find cases where the medicine operates more slowly, and knowing now as I do the power of the medicine, I should have no hesitation at all, if a patient was not mending quickly, to have recourse to other medicines in combination with the subcarbonate of iron. I do not mean to say that this remedy is a specific for the disease, but knowing its powers as I do, I can have no further occasion to make observations to prove its efficacy; and if I had a case I could not cure with it so speedily as I could wish, I would not hesitate to resort to the sulphate of zinc, or the cold bath, or electricity, in combination with it.

Now it has been said (I do not know on what ground) that this

medicine succeeds better if the patient has been well purged first. It is a fact, that this patient had been well purged before he began the iron. But I have had, I should suppose, forty cases treated and cured in this way; some had been first purged, others had not; I know no difference. Some have got well as rapidly, others have required as much as twelve weeks; but by going on with the prescription, not fiddle-faddling backwards and forwards with it, and something else—going on steadily with it, I have always succeeded. This you know to be true, at least you know there has been no case in my wards within your memory, in which the remedy has failed; at the same time there are other excellent modes of treatment.

The girl had been well purged too, but without any relief. She had also taken the subcarbonate of iron, but in doses of ten grains three times a day. It is now known that the range of its doses is far greater than was imagined. You may often give ten times thirty grains at a time. The fact is, you may give just as much as the stomach and bowels will bear. I gave her two drachms three times a day. I saw her on the 15th of February; I saw her again on the 28th, and the report in my own private book is, “Nearly well.” She began to amend in a few days, just as the boy had done. It did not confine her bowels at all, I suppose from having been given in treacle: she had three stools a day. On the 20th of March I saw her again, and she was quite well; she had lost her idiotic appearance, and was perfectly well.

Now you will hear instances of this medicine having failed, and I dare say it will fail in some cases, like every medicine in every disease, but I should think, if persons will use it perseveringly, and in full doses—not deviate—not give it up for a few days, then try it again, then give it up for another few days, and then go back to it again; but steadily persevere with it, you will find such instances very rare indeed.—*London Lancet.*

MEDICAL JURISPRUDENCE.

19. *Medico-Legal Examinations of two cases of sudden death from wounds.*—By MR. ALEXANDER WATSON.—We have already made liberal extracts from the July No. of our valued Edinburgh cotemporary. The following is lengthy, but the cases shew the importance of attention to the minutia of medical evidence. Their peculiar novelty also renders them more interesting.

The first case is that of Ann Rennie, or Pollock, who resided at Gifford Park, at the south side of Edinburgh, whose husband was tried in the High Court of Justiciary, 13th February, 1826, and was convicted of having murdered her, but contrived to strangle himself in jail previous to the day of his execution.

The body of this unfortunate woman was inspected by Mr. Newbigging and myself, on the 13th November, 1825. We were informed of her having died suddenly. She seemed to be about fifty years of age, of stout form, of very low rank, having lived in a

small, dirty, ill-furnished house, having only some shavings and straw upon the floor, covered with a rug, for a bed. The clothes in contact with the private parts were stained with blood. No appearance of injury could be perceived on any part of the body externally. But upon separating the *labia pudendi*, a wound about an inch and a quarter in length was observed upon the inner side of the right nympha. This wound was evidently recent, its surface being covered with coagulated blood. Externally, it consisted of a remarkably clean, straight incision, parallel with the nympha. Internally the finger could be introduced in four different directions, to the depth of about $2\frac{1}{4}$ inches in each; upwards and backwards towards the division of the iliac artery; backwards towards the tuberosity of the ischium; laterally towards the hip-joint, and upwards towards the *mons veneris*. In each direction the wound was of nearly the same diameter, which readily admitted the finger, and had distinctly an obtuse termination. By injecting warm water into the large vessels we found that none of them had been wounded, and the penetrating instrument seemed to have been forced only through the cellular tissue. The weapon had passed up to the peritoneum at the right side of the pelvis, under which there was a considerable effusion of blood, but had not penetrated it. Another very small, but also very clean, external incision was observed at the side of that above described.

The cavities of the cranium, thorax, and abdomen, were each examined, and their contents found to be quite healthy and natural. The hemorrhage, therefore, which had taken place from the wound was the only cause which we could assign for her death; and this, we knew from the nature and structure (erectile spongy tissue) of the parts cut, must have been profuse.

Respecting the probable instrument with which this wound had been inflicted, it was obvious from the cleanness of the cut, that the external part of the incision had been made with a remarkably sharp-edged instrument; and from the very obtuse termination of each of the internal wounds, their small depth, and the absence of any injury of the important neighboring parts, it was highly probable, that though the instrument that inflicted the wound must have had a very sharp edge, it had a round or blunt point. Now, the only very sharp-edged instrument which I conceived such persons were likely to have possessed was a *razor*. This instrument has also a blunt point, and could not be inserted to a greater depth than two or three inches, on account of the fingers holding its blade in so using it. I also conceived that, after the external part was cut, any sort of knife could have been thrust into the parts, so as to have formed the wound above described. This I verified by experiment with a razor upon the dead body.

It was proved by evidence, at the trial of the husband for this horrid crime, that two old rusty table-knives had been found in the house, as also two *razors*. One of these razors had its blade and handle covered with blood, and was found concealed in a piece of green cloth. These particulars rendered it almost certain that this

had been the weapon used ; so that the nature of the wound previously pointed out the probable instrument with much accuracy ; though the circumstance of such having been found in the house was then quite unknown to the medical witnesses.

In this case two other points occurred for the consideration of the medical jurist. Could she have inflicted this wound herself ? Several circumstances which appeared in evidence rendered this impossible ; 1st, She was in a state of intoxication at the time ; 2d, Her husband was in the house along with her,—saw her state,—went for a surgeon, (Mr. George White,) and never alleged this at the time ; 3d, No lethal weapon was found near her ; 4th, The *pu-dendum* was a very extraordinary place for a suicide to inflict a wound.

It was also alleged and plead for the prisoner, that she had fallen upon a piece of broken earthen-ware and cut herself. Could this wound, then, have been occasioned by such an accident ? It was impossible to conceive that any broken piece of earthen-ware in common use could, by the woman accidentally sitting down upon it, have inflicted such a clean external incision, and produced the wound in the different directions above-described. Such a portion of earthen-ware, if sharp-pointed and advantageously placed, might certainly have produced a pretty severe wound of the part ; but it would have been a *lacerated* wound, not of any great depth, and not larger internally than externally, and in no part greater than the size of the wounding body ; and it was very improbable that it would have had different directions internally.

The second case, which is very similar to that just detailed, is that of Mrs. Bridget Calderhead, who resided at Dunbar Street, near the Canal Basin, and whose sudden death was occasioned by a wound received on the morning of the 1st January, 1831. Mr. Mitchelhill, surgeon, had been called in to see this unfortunate woman soon after the accident, but found her dead when he arrived. At the request of the Sheriff, I accompanied Mr. Mitchelhill in the examination of her body, which we performed on the afternoon of the 1st January, in the Police-Office, to which place her body had been carried.

We found the body of this woman dressed in her ordinary day-clothes, and covered with a blanket. We removed her clothes very carefully. They consisted chiefly of a printed cotton gown, two flannel petticoats, (one blue, the other white,) and a shift. These seemed almost quite new, and had no wound or tear in any of them, with the exception of the blue petticoat, in which there were some small worn-holes. The lower part of all these garments had been drenched with blood, with which they were still wet.

We then discovered that the hemorrhage had proceeded from a wound upon the middle of the left *labium pudendi*. Externally, this wound consisted of a very clean incision about three quarters of an inch in length, having a straight direction parallel with the margin of the *labium*. When the finger was introduced into this wound, it entered into a bloody cavity sufficient to have contained a

small hen's egg ; and from this cavity the finger passed to a greater depth in three different directions,—viz. upwards towards the under part of the *symphysis pubis*,—downwards towards the *perineum*, and backwards by the side of the vagina and rectum. Its greatest depth at any of these parts was between two and three inches. When the internal part of the wound was laid open, the divided orifices of several pretty large arteries and veins were seen, and particularly the divided extremities of the large artery going to the clitoris. The orifices of these vessels, as well as the internal surface of the wound, had the appearance of having been very clean cut by a sharp instrument. I removed the wounded parts, and preserved them in spirits.

On the back part of the head there was the mark of a contusion, which had occasioned the extravasation of a small quantity of blood upon the anterior surface of the brain. The cavities of the chest and abdomen were quite natural.

There could be no difficulty in this case in ascribing death to the excessive hemorrhage occasioned by the wound at the *labium pudendi*. We therefore gave this as our opinion as to the cause of death. The other question then arose, What was the probable instrument and manner in which the wound had been inflicted ? From the straight, very clean incision externally, in length corresponding exactly to the breadth of many of the knives in most common use, as well as from the extent, cleanness of the wound internally, and its different directions, it appeared pretty evident, and most probable, that it had been inflicted by some kind of knife ; and, indeed, it obviously could only have been produced by several thrusts of a knife in different directions. Some pieces of a broken wine-glass, however had been found adjoining to some of the blood the woman had lost at the foot of the stair where she had received the wound. It therefore became a question of importance, whether or not the wound could have been occasioned by her having fallen upon these broken pieces of glass ?

1. Let us consider, Is it *physically possible* that any of the portions of the broken wine-glass, or of any wine-glass in common use, could have made such a wound ? A portion of glass capable of forming such a wound must have been between two and three inches long, about three fourths of an inch broad, having a sharp cutting edge, and some degree of point ; and it must also have possessed sufficient strength to permit its having been moved about and thrust in different direction, without breaking. To form such a piece out of a common wine-glass, is evidently beyond the utmost ingenuity of man ; far less, then, could such a portion have been formed by accidental fracture.

The broken portion of glass found, consisted of the stalk of a common wine-glass without the foot, having at its upper part the bottom of the cup of the glass, of about an inch in diameter, attached to it transversely. Nearly the whole of the cup of the glass was broken off, leaving only a few fragments of the sides projecting upwards from the bottom which remained. The part of the stalk of the

glass which remained was about an inch or an inch and a half in length, and its lower part had been clean broken across, leaving no sharp point. It was, therefore, quite obvious that this fragment of glass was completely incapable of forming the wound in question; for, the length, form, and sharpness which were requisite, were completely wanting; and any wound which could have been occasioned by it, must have been quite different in its character. A wound from such a piece of broken glass would have been a *lacerated wound*, not a *clean incision*, not larger internally than externally, and could not have had several different directions internally. The upper end of the glass would have made several small lacerated wounds, while the lower end could not have made any wound at all. I therefore came to the conclusion, that it was physically impossible for the wound in question to have been produced by any portion of a broken wine-glass such as that found.

2. But supposing that it had been physically possible for such a wound to have been occasioned by a fragment of broken glass, was it in any degree *probable* for it so to have happened in this particular case? In order to have accomplished this, the requisite portion of glass must have been standing ready to receive the fall of the wounded part upon it; the person must have either sat down, or fallen forward upon it, and her clothes, at the time, must have been completely out of the way, as there were none of them wounded; and moreover, the penetrating piece of glass must have thrust itself in different directions, making clean incisions internally as well as externally. So that a concurrence of circumstances highly improbable, nay, almost miraculous, would have been required, in order that the wound in question could have been occasioned accidentally.

From a careful consideration of the foregoing circumstances, I came to the conclusion, that it was neither physically nor morally possible that the wound received by this unfortunate woman, could have been caused accidentally by her having fallen on the portion of wine-glass alluded to; and such, I believe, were also the opinions of Mr. Mitchelhill, and of Dr. Christison, who gave his opinion on the case at the trial. But it could not be denied to be *within the verge of possibility*, that the wound might have been occasioned by her having fallen upon some other piece of glass or sharp body, and therefore we each, individually, thought proper in giving our evidence at the trial, to qualify our opinion upon this point, by saying that we considered it to be *scarcely possible and very improbable*.

I was also asked at the trial whether or not this wound could have been produced by her having fallen accidentally on a pair of scissors; to which I stated, that I did not think it could by any of the scissors in common use. For, it is obvious that, to have produced such a wound, the blade or blades of the scissors, when together, must have had the sharpness of a knife, as also the requisite length and breadth; besides being in an erect position when fallen upon, and afterwards moved in different directions to form the internal wounds,—a combination of circumstances which, as already men-

tioned respecting the glass, I conceived to be nearly impossible. I may add, that neither scissors nor pockets were found about the person or clothes of the woman.

By the evidence adduced at the trial of two young men, brothers, of the name of Duncan, for the murder of this woman, it was obvious she had received a wound at the first floor of a common stair, almost immediately after which, she was precipitated headlong to the bottom of the stair. When she was there found, upon being set up, blood was observed trickling down her legs. Much stress was laid by the counsel for the panels, upon there having been no blood seen upon the stair. But when it is recollected that she had on her two thick flannel petticoats, a gown and shift, which were each drenched with blood, it is obvious that the clothes, absorbing the blood when it first flowed, and her rapid progress head forward down the stair, easily explain this circumstance.

The above are two cases very similar in their principal features, and appear to me to be highly interesting in a medico-legal point of view. From the details here given, it is obviously necessary, in such cases, for the medical jurist, to form an accurate opinion whether the death had been occasioned by violence or by natural causes; and, if, by violence, to say whether most probably by accident, suicide, or murder. These form considerations of the highest importance to medical men, as upon their evidence the lives of others frequently depend.

In the above cases, it is also obvious, how very accurately the nature of the wound may point out the probable weapon of its infliction; and how very important this circumstance is, in establishing the criminal design with which such wounds may have been inflicted.

In both of the above cases, I removed and preserved the wounded parts, by cutting out along with them a considerable portion of the soft parts; at the same time, carefully preserving entire the external wounds. This I consider to be a matter of considerable importance in all such cases; *1st*, That the wounded parts may afterwards be examined more minutely; *2dly*, That any lethal weapon or other sharp body afterwards found and supposed to have occasioned the wound may be compared with it; and, *3dly*, That the nature of the wound may be seen by any other medical jurist who may afterwards be consulted in the case, either by the crown or in behalf of the accused.

Before concluding, I shall make a few remarks on wounds inflicted in the situation of the cases just detailed. In both the above cases this part of the body seems to have been selected by the murderers to effect their design secretly. For in both, but particularly in the first, the wound was concealed to a superficial observer. And they may have had an idea, from the frequency of "flooding" in females, that their deaths might have been supposed to have happened either from this cause, or by accidentally injuring themselves by sitting down upon some sharp body. For, it is a curious fact,

that in both cases the probable murderers* were the first to go for medical aid to the deceased.

Both cases also show, that wounds of the external parts of generation in the female may prove fatal by excessive hemorrhage ; the peculiar structure of the parts, consisting of erectile spongy tissue, which is very vascular, giving rise to a continued, steady, though not very rapid, flow of blood.

In both cases the defence set up by the pannel's counsel of the deceased having cut themselves by having accidentally sat down upon broken sharp bodies, was certainly plausible, and could only be controverted by the careful examination of the nature and form of the wounds, and a comparison of them with the alleged inflicting bodies. In both cases this was of great importance, as the deceased did not live to narrate the causes of their wounds ; and in both, it appears to me, that the inferences deduced were beyond the possibility of doubt.—*Edin. Med. and Surgical Journal, July, 1831.*

* Though the Duncans got off by a verdict, by a plurality of the jury, of "not proven," yet there could be very little doubt of the guilt of one of them. It was impossible, however, to ascertain which, so that both were transported *for assault*.

DOMESTIC INTELLIGENCE.

1. *Reports and Tables of the Meteorological Committee of the New-York Medical Society, for the first and second quarters of the year 1831.* By JOHN BAXTER, M. D., Chairman of the Committee.

FIRST QUARTER.

1831.	BAROMETER.			THERMOMETER.			RAIN.		WINDS.
	Max.	Min.	Diff.	Max.	Min.	Diff.	Depth.	No.	
Jan. 1st to 10th	30.3	29.72	0.58	56°	20°	36°	1.83	2	
10th to 20th	30.4	29.3	1.10	35	9	26	0.50	1	
20th to 31st	30.05	29.4	0.65	34	8	26	0.10	1	
Feb. 1st to 10th	30.15	29.3	0.85	44	10	34	0.96	2	
10th to 20th	30.67	29.74	0.93	45	10	35	0.70	1	
20th to 28th	30.54	29.28	1.26	47	15	32	0.96	1	
Mar. 1st to 10th	30.25	29.72	0.53	65	29	36	0.51	1	
10th to 20th	30.33	29.5	0.83	58	25	33	0.45	1	
20th to 31st	30.37	29.25	1.12	68	26	42	3.11	4	

This quarter has been attended with long continued cold weather and much snow ; the cold, however, was not so severe as the same season in 1830 ; previous to the snow in the beginning of January, there had been but little frost, so that the ground was scarcely hardened, and the first snow lasted during the whole winter.

January—A heavy rain commenced this month on the 9th and 10th ; a deep snow fell without much drift or wind, which was from the N. East. On the 15th and 16th, there was a severe snow storm, drifting very much, and rendering it impossible to observe exactness of the depth fallen. It began in Boston, on the morning of the 15th, and here on the night of the 14th, with the wind N. E., ranging to N. W. There was one more snow this month after this. The lowest the thermometer fell this month was 8° above 0. In Boston it was 8° below. The highest was 56°. The barometer did not exceed 30.4, and fell to 29.3. The result of the water of the snow when melted, as near as could be obtained, was 2.43.

February—This month commenced with a heavy fall of snow and rain ; another fell soon after, which, after lying some time, was nearly carried away by two heavy rains. The highest the thermometer rose was 47°. The lowest it fell was 10°. The barometer arose to an unusual height, 30.67, on the 14th, but on the 23d, it was down to 29.28 inches. During the eclipse on the 12th, there was no apparent change in the barometer ; the thermometer fell to 27° from 30° ; clouds formed very rapidly and very thick, and obscured the sun some and the heavens generally. The quantity of water from the snow and from the rain, was 2.62 inches.

The cold was not so intense as the previous season, when the thermometer was to 5°.

March—In this month there has been much mild weather; on the 25th the thermometer was up to 68°; the lowest was at 23°. The barometer was at the highest on the 22d, when it was at 30.37 inches, and at the lowest on the 30th, when it was 29.25. There were six rains during the month, giving 4.07 inches of water.

	BAROMETER.				THERMOMETER.				RAIN.	
	Max.	Min.	Diff.	Med.	Max.	Min.	Diff.	Med.	Depth.	No.
January	30.4	29.3	1.1	29.85	56°	8°	48°	32	2.43	4
February	30.67	29.28	1.39	29.97	47	10	37	28½	2.62	4
March	30.37	29.25	1.12	29.81	68	25	43	46½	4.07	6

SECOND QUARTER.

	BAROMETER.			THERMOMETER.			RAINS.	
	Max.	Min.	Diff.	Max.	Min.	Diff.	Depth.	No.
April 1st to 10th	30.27	29.13	1.14	69°	33°	36°	0.72	2
10th to 20th	30.19	29.67	.43	74	33	41	2.92	3
20th to 30th	30.02	29.48	.54	62	38	24	2.88	4
May 1st to 10th	30.20	29.35	.85	70	40	30	1.72	1
10th to 20th	30.4	29.92	.48	77	45	32	.70	1
20th to 31st	30.14	29.67	.47	94	50	44	.25	1
June 1st to 10th	30.22	29.90	.32	94½	58	36½	.05	1
10th to 20th	30.20	30.02	.18	91	65	26	1.06	2
20th to 30th	30.33	29.9	.43	89	51	38	.80	1

This quarter, although at the first part quite low in point of temperature, so that the vegetable world was kept backward, the latter part was quite of a high temperature.

April—The thermometer arose as high as 74° for one day, which was the 20th; it was, however, as low as 33° several mornings. The barometer arose to 30.27 and was as low as 29.13. On the 8th and 9th there was a very heavy blow, attended by a very great change in the barometrical pressure and by rain.

About the 18th the Aurora Borealis was quite splendid. Vegetation made but little progress this month. There fell 6.25 inches of rain in 9 times raining, some of which were very heavy.

May—The commencement of this month was quite cool, the thermometer being down to 40° to the latter part, when it arose to 94°. It was both cooler and warmer than the same month last year. The barometer marked as high as 30.4 inches, and as low as 29.35 inches. There was heavy electric discharges on the 18th. In 3 falls of rain there fell 2.67 inches of water.

June—The first two days of this month was the highest in temperature, being to 94½; the lowest was on the 24th being to 51°. The barometer marked no higher than 30.33 inches, and no lower than 29.9 inches. There were electric discharges at two different periods, and four falls of rain, in which there fell 1.91 inches of water.

	BAROMETER.				THERMOMETER.				RAIN.	
	Max.	Min.	Diff.	Med.	Max.	Min.	Diff.	Med.	Depth.	No.
April	30.27	29.13	1.14	29.70	74°	33°	41°	53½°	6.25	9
May	30.4	29.35	1.05	29.875	94	40	54	67	2.67	3
June	30.33	29.9	.43	30 115	94½	51	43½	72¼	1.91	4

2. *Death from Digitalis*.—By S. B. SMITH, M. D. Surgeon, U. S. A.—Science loses an interesting portion of the labors of physicians, because records of the salutary influence of medicines only, are extensively promulgated; whilst the generous, but unavailing efforts to arrest destruction, criminal ignorance or neglect of duty, and above all, the baneful tendencies of known or experimental remedies, are, for the most part, sedulously concealed.

Acting upon a different principle, I record the painful fact, of a man's having been sent, by my agency, to his last account, before his allotted time! This is no paradox; he was destroyed at once, by the means intended for his benefit. Our profession regards ordinary instances of dissolution as unpleasant inconveniences, which are soon forgotten: but when death is hastened by visible means, impressions never to be forgotten are made upon the actors in the scene. In the case about to be related, these impressions were heavy upon me, and although the time is long since past, they are still green in my recollection. From observations made upon the destroying agent, since the period alluded to, I am inclined to believe that this lamentable curtailment of life, was attributable, as much to the peculiar state of the sufferer, as to the positive quality of the poison. The facts which induced such a belief, are given, and the attention of practitioners invited to them. Their experience will confirm or reject my speculation. In either case the cause of humanity will be subserved.

W. Stillwell, a fifer in major Thomas Biddle's company of artillery, stationed at Fort Mifflin, Pennsylvania, aged 20 years, returned from furlough on the 17th March, 1817, and on the 19th, he was brought to the hospital, the most finished object of debauchery I had ever seen in one so young. His face was preternaturally enlarged; his cheeks, mottled with "whilks, and knobs, and purple fire," were protruded beyond the nose, which partook largely of the disgusting rosa of the cheeks. His eyes were dull and blood-stained, and a reddish colored serum oozed from the corners of his purple bloated lips. In truth, he stood upon the verge of chemical decomposition. To these were added, irritable stomach, shiverings, yellow skin, swollen ankles, difficulty of breathing, incessant cough, pain in the chest, and confusion of intellect. Two intentions were here to be answered; the first was to allay irritation, and the second to remove an obviously diseased state of the liver. The first was accomplished by warm baths, rest, opiates, and diet; and the latter by a protracted course of purgation, followed by gentle saliva-

tion. It required a hundred days and upwards to restore this loathsome mass to that state of health necessary to the discharge of duty. As has already been seen, this man was prone to beastly intemperance, and he would incur every privation, and indeed corporeal punishment, to indulge in the use of ardent spirits. With a view to avoid observation, and to drink undisturbed, he pretended business in Philadelphia, and as there was much music in the garrison, he was permitted to be absent 11 days, toward the close of July. It was evident at his return, that he had spent his time in exclusive dissipation. On the 5th August, he was reported sick with the "horrors" of the soldier. This means, deadly sickness of stomach, constant retchings, and universal shivering. To counteract these, he was ordered a warm bath, free opiates, and brandy toddy. On the 6th and 7th, his cough was without intermission. There was great difficulty of breathing, and considerable pain in the chest; the pulse was so confused as to resemble a convulsion. With too little reflection, I prescribed three grains of digitalis, to be divided into four equal parts, all of which were given in the course of the day. In the evening, soon after taking the last dose, he was reported to be very ill. I found him in deep coma, with dilated pupil, stertorous breathing, a rapid, weak, intermitting pulse, and occasionally convulsed. He was instantly bled, and after taking opium, camphor, and ammonia, he was placed in a warm bath. The blood drawn was almost black, but after an interval of two hours, as the adverse symptoms still continued, he was again bled and placed in a warm bath. The pulse suddenly sunk, and after a few short spasms, he expired, thirteen hours after taking the first dose. A careful examination of the body too truly informed me how the sudden death was accomplished. The energy of the brain and heart, or sensorial power, had been completely overwhelmed in a few hours by the activity of a poison unnecessarily administered. Although no part of the body could be said to be absolutely free from disorder, yet there were no appearances that could warrant so disastrous a termination. The internal head alone gave decisive proof of great morbid action. The brain and membranes were loaded with purple black blood, which was obviously the cause of coma, and possibly of the convulsions; of the latter, however, reasonable doubts must exist until a sufficient number of dissections shall determine whether this state of the encephalon always follows the over-use of narcotics. Death from this class of medicines is always preceded by coma and spasms; but these latter take place so soon after their exhibition, as almost to exclude the belief of their being secondaries. This patient had no symptom of brain disease on the morning of the day of his decease, and the steward who gave him his medicine, informed me that he had no complaint until after taking the third dose, when he had sickness of stomach and dizziness, and said that he could not see distinctly. Had this been reported to me, this poor inebriate might have been spared a little longer, perhaps to repent of his evil ways. His irritable pulse, languid absorbents, cough, and anhelation, were merely so many ex-

pressions of nervous exhaustion, which proper diet, quietude, and opiates, would have removed in time, had I only permitted my usual perceptions to have operated in his favor.*

In the seven succeeding years, I employed digitalis several times in diseases which originated from, or which had been aggravated by, intemperance. It uniformly induced some unpleasant effects, and was necessarily abandoned for less dangerous remedies. I was compelled to admit, that this violent medicine was particularly obnoxious to that state of nervous irritability and exhaustion consequent upon long protracted intemperance, and that it should be cautiously employed with a drunken soldiery. It was not, however, until the close of the year 1824, that I became fully satisfied that the practice with such a class of men, was to be abandoned. In the summer of that year, almost every individual in the garrison and vicinity of Fort Mifflin was afflicted with some form of bilious disease, and many of them were of malignant character. An unusual number of chronic diseases followed, and among those in garrison were eight cases of dropsical effusions from congestions. Five were ascites, two hydrothorax, and one in which both forms were combined. All these patients were intemperate, save one, (a woman) which rendered their treatment tedious and embarrassing. I used the digitalis in every case, but it proved decidedly hostile to all but the woman, who had ascites. Combined with crem. or tartar and iron, it cured her in a surprising manner; but as often as it was attempted in either of the other cases, symptoms obnoxious to safety occurred. Two of the men were absolute drunkards, and the digitalis exerted an influence particularly pernicious to both. Such as cold sweats, virginous whirls, dilated pupil, and sunken pulse. One of them died, and his exit was certainly hastened by its use. The others were intemperate, although not strictly drunkards, and with them I persevered in its use; but nervous tremors and cold debilitating sweats admonished me that I was driving them to death. I have a patient now with ascites, from enlarged viscera, of long standing, caused by bilious fever of a southern climate, and aggravated by intemperance. I have three times given him the fox-glove in light doses, combined with aromatic confection, but loss of appetite, night sweats, and diarrhea invariably followed its adoption. I have another soldier with strumous pulmonary inflammation, who has abused his constitution by the use of ardent spirits; in him also the digitalis caused vertigo, cold sweats, and diarrhea, although prescribed with great caution, and combined with opiates.

Our profession is one of distress, and requires an uncommon philosophy, or a brutal insensibility, to sustain the perpetual demand made upon our sympathies; but no part of my practice has been more irritating and perplexing, than patiently to wait upon the mixed disorders which are based upon rum. The weakness of humanity is here in its last state of degradation, and while we anathematize

* Did not the confessed mal-practice in this case consist more in the *bleeding*, than in the use of digitalis?—*EDS.*

the destroying cause, we are unable to abandon the victim. A double misery is pressed upon us as men, and the profession is rebuked because of its insufficiency to renew an exhausted constitution! It is hard that day by day and night after night we are compelled to "alleviate the pain inseparable from existence, and to soothe the sorrows allied to humanity"—but it is absolute cruelty, when we know that these pains and these sorrows are inflicted by profligate vice. I have labored with unceasing assiduity to fix upon some means by which to counteract the desolating powers of ardent spirits, but can find none. The accursed "hair of the same dog" must be given to the violator of reason, of honor, and morality, until death removes him from our sight.

Baltimore, (Md.) August, 1831.

3. *Case of Reduction of Humeral Dislocation, by counter-extension from the opposite arm.*—By Dr. JAMES ARMITAGE, of Baltimore.*—Nicholas Parker, aged about thirty-five years, on raising his hand violently over his head, had the head of the os humeri dislocated downward and forward under the pectoral muscle. The arm was found in a horizontal attitude, and pointing slightly backwards. He being very muscular, before attempting the reduction of the bone, it was deemed advisable to abstract blood. When about xxx oz. had been taken, he became very much relaxed, yet the muscles of the shoulder on the affected side contracted violently. When the attempt to reduce it was begun, Mr. Leonard and a gentleman present made counter-extension from the opposite hand. Dr. Morrison and myself, from the hand and fore-arm of the dislocated member. We gradually made extension backwards, in the direction in which we found it. After continuing it some time, the head of the bone slipped into the axilla and formed a primitive dislocation downward. Then by continuing the extension, and gradually depressing the elbow, at the same time raising the superior part of the bone with my left hand toward the axilla, it slipped into its proper place with an audible snap. When I called to see this patient, it immediately occurred to me that Professor Smith's precepts in relation to the reduction of this dislocation should be tried, and I was exceedingly pleased to find them so unequivocally confirmed.

4. *Case of Malignant Phagedenic Ulcer.*—By AMOS POLLARD, M. D., New-York.—I was called on the 8th of August, 1829, to attend on Mrs. M—, whom I found suffering from an inveterate ulcer on the right leg, anteriorly midway, and extending deep between

* The above case illustrates and confirms the utility of making counter-extension from the opposite arm in dislocations of the Humerus, the rationale of which I have heretofore given to the public. N. R. S.

the bones. Likewise two of a more superficial character; one situated on the middle and outward part of the right thigh; the other on the gluteus-maximus muscle of the same side. She complained of excruciating pain at intervals, principally in the foot and ankle, attended with some degree of lameness. The ulcer on the leg, (which was about the size of a dollar,) presented a ragged edge, was partly filled with a dark colored, striated, putrid mass, from which a black sanious matter was continually discharging. The other sores presented a different appearance; were each of the size of the palm of the hand; the skin ulcerating in fistulous holes, surrounded by a dark purplish areola, and appeared fast extending. Mrs. M. is an English woman, of a good habit of body, and has borne ten children. She was attacked with inflammation and swelling of the leg, which terminated in this species of ulceration, only two weeks after her last confinement, eleven years ago, during all of which time, (except a very short interval,) the ulceration of the leg has existed; frequently changing its location, healing in one place, and appearing in another. The leg, on the outer and back part, presenting the appearance of one continued cicatrix. The fleshy bellies of the gastrocnemii muscles being greatly diminished. The ulcers on the thigh and hip were only of about six months standing. She states in her history of the case, that she was treated in the first instance with blisters applied directly to the inflammation and swelling, which, however, did not prevent suppuration; and from thence may be dated the origin of the ulceration. She had been attended at different times, by several eminent surgeons of Dublin and elsewhere; who appear, nevertheless, (by her statement,) to have pursued a *pro-re-nata* treatment, for the most part, of emollient poultices and detergent washes and ointments. However the ulceration progressed as above stated, till her voyage to this city operated a change in her constitution, and the ulcer healed. It remained sound, however, a very short time, when the ulceration again commenced with increased violence, and extended to those other parts above mentioned.

My treatment of this case was very simple, consisting internally of the ordinary decoction of sarsaparilla and guaiacum, to which was added a small quantity of corrosive sublimate, according to the following formula:—

R Rad:—Smilacis Sarsaparilla.

Ras:—Ligni Guiaci āā ʒiv.

Hydrargyri-per-chloridi grs. iii.

The dose of a decoction of three pints, being a half gill, three times per day; which my patient took regularly and constantly during eight months, at the same time using a mild but nutritious diet. The local treatment in the first instance consisted of the frequent application of the lunar caustic, a free use of the aqua-phagedenica, or yellow wash, and the constant application of a flannel bandage, extending from the toes to the hip. The ulcers being covered with simple cerate. I continued this treatment six months, with little apparent benefit, when the caustic and wash were exchanged for

the liquor potass arsenitis, and the simple cerate for the ungt. stramonii, which in the course of a month (in conjunction with the decoction internally,) produced evident and beneficial changes. The discharge became of a thicker consistence, approaching to healthy pus. The ulcers began to contract, and in eight months, they were perfectly healed, and my patient has since continued in uninterrupted health. She pursued, however, a desultory use of the decoction for several months longer. I have used both the above preparation and the panacea of Swaim extensively for several years, and my experience is in favor of the simple decoction, on account of its cheapness; for I have ever been able to produce every remedial effect that I ever saw accrue from the use of that celebrated nostrum. My experience will warrant me in the assertion, that it is capable of effecting all the remedial changes in the human system, which are so generally ascribed to that *QUINTESSENCE* of quackery, *Swaim's Panacea*, so universally celebrated in our civilized community.

OBITUARY.

It is with unfeigned regret we announce to our readers, the decease of Dr. SAMUEL L. MITCHILL, whose labors in the cause of Medical Science, Literature, and the Arts, have been long known to the profession, and the world at large. He had for many years occupied a wide space among the men of science in Europe and America, and he continued to receive to the day of his death, evidence of the estimation in which he was held by the learned and scientific. Few men have done as much as Dr. Mitchill, to promote and encourage the improvement of Medical Science and its auxiliary branches. He was indeed a perfect devotee to scientific pursuits, and nothing gave him more pleasure than to be constantly engaged in some labor that would administer to the benefit or happiness of his fellow beings. Born to no inheritance, he began the world with no other riches than an education, procured by means of a legacy left him by his maternal uncle, Dr. Samuel Latham, a distinguished physician and practitioner of his time on Long Island. With this outset he began his career, after obtaining his medical degree at Edinburgh, and returning from Europe in 1787, rising by the powers of his own mind, and the energy of his own genius, into the most distinguished society and estimation at home, and the highest rank among the *sçavans* abroad. From that time to the day of his death, a period of forty-four years, he was assiduously engaged in the improvement of knowledge and the cultivation of science; and although he often took an active part in the politics of the day, and was repeatedly a member of the state legislature, or a representative in congress, or senator of the United States, yet he never withdrew from scientific pursuits, but on the contrary, turned them to the best account in every situation of life, and

made every situation he occupied administer to the enlargement of science. His writings are numerous, and if collected, would be voluminous. They are scattered through *twenty-two volumes* of the New-York Medical Repository, and many other periodical works of Europe and this country. They consist of numerous orations and discourses delivered on public occasions, Medical and Surgical writings, Chemical essays, Mineralogical and Geological papers on National concerns, Botanical, Agricultural and Horticultural, many on subjects of natural history, some on miscellaneous subjects, and even some well written pieces of poetry.

In his pecuniary affairs, Dr. Mitchill was prudent and judicious, and never avaricious. He preserved and improved his wife's patrimonial estate, and left it in a condition to make his widow comfortable. He never gave himself to money making, or the increase of his worldly goods by speculations. Many a student can bear testimony of his liberality, in allowing a gratuitous attendance on his lectures, or giving time to those, whose situation of life was not sufficiently affluent to make prompt payment.

His general character bore the impression of amiability and goodness in the extreme. He was possessed of a remarkable equanimity of temper, and was never ruffled by attempts to impose upon his goodness. He was affectionate to his friends, kind to all, easily accessible, and ever ready and willing, to receive or impart information. He had an astonishing memory, and was in himself a walking Encyclopedia, so much so, that the late Governor Clinton used to say, that Dr. Mitchill was "*semper paratus*," whenever consulted on subjects of science, history, or politics, and we have heard a learned divine make a similar remark in regard to religion.

Dr. Mitchill was an erudite classical scholar, though he never received an academical education. He was born in the township of North-Hempstead, Queen's county, state of New-York; and about twenty-five miles from this city, in the year 1764. During the revolutionary war, he was sent to a school at Hempstead, on the south side of Long Island, the only good one in that part of the country, in those troublesome times. There he acquired his first knowledge of the languages, under the Rev. Mr. Cutting, and also the rudiments of French. These were afterwards increased by self application, and private tutors, while in Europe. He subsequently made himself acquainted with the Italian, German, and Spanish languages, sufficient to read and understand them.

He studied medicine, with Dr. Samuel Bard, in the City of New-York, went to Europe in 1784, and returned in 1787. While absent, he visited France, and improved himself in the language of the country, went to Edinburgh, and attended the medical lectures there, where Cullen, Black, Hope, Monro, Gregory and Duncan, gave celebrity to that school. He also attended the private lectures of John Brown, and became well acquainted with the Brunonian doctrines and their author.

In 1792, he was appointed professor of chemistry, natural history and agriculture in Columbia College, New-York, and was the first to introduce the Lavoisierian doctrines of chemistry, and the new French nomenclature, into the schools in this city.

In 1797, Drs. Elihu H. Smith, Edward Miller, and Samuel L. Mitchill, commenced a quarterly publication, entitled, the New-York Medical Repository. Dr. Smith died before the 2d vol. was completed, and Dr. Miller before the 15th, but Dr. Mitchill continued to contribute and support the work, until he saw the 22d vol. completed, when it gave place to other similar works by other hands. During the whole of this period he never received any pecuniary compensation for all his writings and labor. This work is a mine of medical knowledge, containing facts and observations, on almost every subject of medicine and the auxiliary sciences.

Dr. Mitchill was also a man of benevolence. He was a member of the Society for the abolition of slavery, and of numerous other charitable institutions. Ever ready to do good, he acted as if it were the rule of his life, to confer upon mankind as many benefits, and to cause as little evil as possible. He died on the 7th September, 1831, in the 68th year of his age.

We can only give this hasty sketch of a man who was deservedly great in the field of science. We trust that some person who shall have access to his papers, will hereafter give a correct biographical memoir of our departed friend.*

* Note. Since writing the above, we understand, that Dr. Mitchill has, by his will, devised to Dr. Samuel Akerly, his wife's brother, "*all his books, maps, charts, prints, drawings, port-folios, and collections, including the files of letters from distinguished persons,*" &c. among which are some very rare works and valuable manuscripts. From this gentleman's means and talents, we may soon expect an interesting memoir of the life and character of Dr. Mitchill, as we have just learned that he has acceded to the wishes of the LYCEUM OF NATURAL HISTORY, to prepare a biography of their learned fellow member, generous patron, and one of the earliest founders in the society.

The MEDICAL SOCIETY have likewise done a just honor, to the memory of Dr. Mitchill, by requesting of Dr. Felix Pascalis, the preparation of a public oration, to be delivered at an early date. Dr. Pascalis's abilities, and long continued intimacy with the deceased, promise a eulogy that will be justly appreciated.

BIBLIOGRAPHICAL RECORD.

1. *A Memoir of the Life and Character of JOHN WATTS, M. D. ; late President of the College of Physicians and Surgeons. With an Address, to the gentlemen who were graduated Doctors of Medicine at the commencement of the College of Physicians and Surgeons, held April 5th, 1831.* By SAMUEL W. MOORE, M. D. New-York : G. & C. & H. Carvill. 1831. 8vo. pamphlet, pp. 28.

ON another page we have recorded an obituary notice of one whose services fill no ordinary space in the history of Medicine in this country ; by the little memoir, now before us, we are called upon to contemplate the life and character of another, whose memory will long be cherished, by all who knew him sufficiently well to appreciate his worth. And who in our profession, in this city, did not know Dr. Watts ? His social qualities, the purity of his character, his independent spirit, his acts, and his talents, have a claim upon the memory, which cannot be easily resisted. Dr. Watts was not only known in the place of his residence, but his reputation had long been well established throughout our state, and we may say, to some degree, throughout the union. It is, therefore, for those of our readers, that may feel an interest in the life of a good man, and who may not have seen this memoir, that we shall give a much more extended notice than is usual, under the head of Biography.

The professional life of Dr. Watts was not accompanied by those painful struggles, which so often depress the best energies of our less favored brethren. Born in affluence, his course was unimpeded by the obstacles encountered by those whose only inheritance is their profession ; but the fortunate allotment of the good things of this life, did not, as is so repeatedly witnessed in many similarly situated, prevent his exercising his best faculties, with unwearied diligence, both in the improvement of his mind, and in the acquisition of a general and extended practice. In this respect, his character may be held up for imitation, for he labored as unceasingly as though he had not even possessed a moderate competency.

Dr. Watts was descended from a highly reputable family. His grand father, John Watts, was, for twenty years, one of the Council of the Governor of the Province of New-York. John, the son of this gentleman, was the last Recorder of this city, prior to the revolution. He was afterwards Speaker of the House of Assembly, and subsequently to the adoption of the constitution, he was a member of the Congress of the United States. This gentleman still survives, and has for some years presided over that excellent institu-

tion, the New-York Dispensary, a public charity, in every respect worthy of the generous patronage he has bestowed upon it. It is to this venerable citizen, that the Leake Orphan House is indebted for its munificent endowment.

Robert, the father of the doctor, we are told, "was a gentleman of great piety, intelligence, and worth." He married Lady Mary, daughter of the Earl of Stirling, who is well known in the annals of our revolutionary war. He was an ardent friend of the colonies, and held the rank of Major-General in the American army.

Dr. John Watts was born in this city in 1785. After a preliminary education, he entered Columbia College, in the year 1800, and was graduated a Bachelor of Arts in 1804. He commenced the study of medicine soon after, under the instruction of the late Professor Wright Post. With this excellent physician, he remained three years, attending at the same time the lectures of the Medical Faculty of Columbia College, of which his preceptor was the professor of Anatomy. In the year 1807, Dr. Watts went to Edinburgh; there he remained for three successive winters.

Of Dr. Watts' literary character, Dr. Moore has taken no notice. He was a well read physician, and was familiar with both the older and modern systems of medical science. He kept pace with the improvements of the age, but did not suffer himself to be carried away by every new doctrine. His writings, few in number, and of a practical nature, are found, we believe, only in the medical journals of this city, and in the Medical and Surgical Register, a periodical, consisting chiefly of cases occurring at the New-York Hospital, of which institution he was early chosen one of the attending physicians, an appointment which he held until within a year of his death, when he resigned on account of impaired health. The Register was conducted by Drs. Watts, Mott, and Stevens, and is rich in much valuable matter. The most extended efforts of Dr. Watts' pen, are the two papers, the one "*Remarks on the supposed effects of drinking cold water, illustrated by cases which occurred during the hot weather of the summer of 1818*;" the other, "*An account of the Yellow Fever, which appeared in various parts of the United States, during the summer and autumn of 1819.*" The first paper contains many important facts connected with the etiology and treatment of the cases referred to. Dr. Watts, differing from Dr. Rush and other writers, conceived that the evil arose less from the temperature than quantity of the water, and intemperate habits, and exposure to the sun. He would, therefore, call it an apoplectic disease, and upon this view of the case, he introduced a practice which has since become common, namely, bleeding. The views of Dr. Watts are doubtlessly correct, as will be conceded by those who have carefully observed the phenomena of any number of cases. The second paper is quite lengthy, and contains many facts in support of the doctrine of domestic origin and non-contagion. The subject is handled with considerable dexterity, and a severity of satire, that show his abilities as a controversialist in a favorable light.

Had Dr. Watts lived, we do not doubt, that from his extensive

opportunities, his careful observation, and his well stored mind, the profession would have been benefited by more extended publications. Few men were better qualified, in every respect, for he was not only a practical man, but his whole education fitted him in a peculiar manner, for a ready expression of unprejudiced opinions. His life was one of activity, his mind was scrutinizing, his feelings independent, and his whole conduct that of a gentleman. To this point Dr. Moore observes :—

“ A characteristic feature in the mind of Dr. Watts, was the independence with which he adopted, and the firmness and decision he displayed in maintaining his sentiments,—and when conscience, or sense of duty prescribed the course to be pursued, without any wavering, or halting between two opinions. Hence it happened that he sometimes became engaged in controversies, which could not fail to be unpleasant to him.

“ In consequence of a faulty organization of the College of Physicians and Surgeons, the whole power under the Regents of managing the affairs of that institution, previous to the year 1820, was vested in the hands of the professors, who were not only a majority of the board of trustees, but almost the only members who met and acted in the business of the College.

“ In the year 1819, charges against the College were brought forward in the Medical Society of this county, stating various abuses which were said to exist in that institution, when a committee was appointed by the society to examine into the truth of those allegations. Dr. Watts being one of that committee, took an active part in the duties assigned to it, and their report induced the Medical Society to address a memorial to the Regents of the University, setting forth the various grounds of complaint. In consequence of this, the Regents, in 1820, were led to make some changes in the government of the College ; by increasing the number of Trustees, and prohibiting the professors from constituting a majority of any meeting for the transaction of business.

“ Dr. Watts was one of the Trustees appointed at that time, and upon the re-organization of the College, in 1826, was chosen its President, the duties of which office he continued to perform with zeal and ability, until the time of his death. Dr. Watts had also, at one period, held the office of President of the Medical Society of this county, and was, at another time, their delegate to the Medical Society of the State, which body afterwards elected him a permanent member.”

As a physician, Dr. Watts stood deservedly high : his opinion was sought for with confidence. After the death of Dr. Post, no man held a superior rank in consultations. To this enviable position he was entitled, both by his strict moral and skilful professional character. No one ever charged him with the slightest approach to a breach of medical ethics, and every physician therefore trusted in his honor with perfect confidence. His feelings were too noble ever to permit him to violate this confidence. The approaches of his younger brethren were never insulted by an aristocratic hau-

teur, nor were his superiors in age ever treated with a want of respect.

It was these characteristics that raised him so high in the opinion of physicians, and of his fellow citizens, and hence it was that at the time of his death he enjoyed so many marks of their esteem. The governors of the hospital entertained so manifest a respect for his character, that at the time of his resignation as attending physician, they conferred on him the appointment of consulting physician, "a flattering mark of distinction," says Dr. Moore, "which but few of his predecessors had received." The Lying-in Asylum, and the New-York Dispensary also, both numbered him among their consulting physicians. Of the latter he was also a trustee, and it is, in a great degree, owing to his exertions that this institution is indebted for the present commodious building which they are now in possession of. Dr. Watts had one time been elected President of the county Medical Society, and was at another period its delegate to the State Society, of which body he was afterwards elected a permanent member. Being one of the Trustees of the College of Physicians and Surgeons, at its re-organization in 1826, he was chosen its President; the duties of which office he performed with great zeal and ability, until the time of his death. He was also one of the Trustees of Columbia College, and held for a long period the office of vestryman of Trinity Church.

In conclusion, Dr. Moore has faithfully sketched his character, and we will here extract freely from the memoir.

"The reputation of Dr. Watts as a practitioner of medicine, stood deservedly very high; this, in connexion with his known integrity and moral worth, secured for him the respect and confidence, not only of the public generally, but, in a remarkable degree, of his professional brethren. He was in consequence much sought for in consultation, and this testimony to his professional ability was given at an earlier period of his life than it is usually obtained.

"He was in the habit of examining patiently every symptom, and of observing and minutely inquiring into every circumstance, which, from having even the remotest bearing on the case, could throw any light upon it, and thus aid him in the ultimate object in view, applying the means of relief. After having thus, as far as possible, possessed himself of all the information to be obtained, he was better enabled to take an enlarged view of the case; and then, feeling great confidence in the resources of his art, he was bold and energetic in the employment of such means, as, in his judgment, the nature and circumstance of the case rendered necessary for its relief. It was indeed sometimes thought that his confidence in the curative power of medicine was carried to an extreme, and that he was thus induced to place too exclusive a reliance upon art, and to set too low an estimate on what the unaided salutary efforts of nature are competent to effect.

"In all his social relations, Dr. Watts was truly exemplary; a kind and affectionate husband and father, a warm-hearted, devoted friend, a public spirited citizen, actively benevolent and liberal in

his patronage of all worthy objects. The records of our various humane and religious institutions will bear ample testimony to the correctness of these statements.

"He was remarked for the assiduity, kindness, and humanity shown in his attentions to his patients, and when their cases required extraordinary care, those attentions were unwearied, and almost incessant. Indeed, his feelings were generally of that benevolent character, that his heart prompted him to render assistance to all persons, and upon all occasions, where his aid or counsel was required. The interest he felt in behalf of his friends, induced him to make their cases his own, and where his services could be useful to them, no exertion on his part, which was practicable and proper, was wanting to effect all that could be desired, and more than could be expected. It was partly owing to this feature in his character, that he had become the centre of that extensive circle, over which his influence was known to extend.

"Christianity with Dr. Watts did not consist in a mere speculative faith, the cold assent of the understanding, which exhibits no effect on the life, but in him christianity appeared more in its true light; his faith was an active principle, whose benign influence was extended over the whole character, purifying the affections, regulating the thoughts, and controlling the conduct. He appeared deeply imbued with strong religious feelings, the effect of which was visible in all his intercourse with society, and especially in the chambers of the sick, where frequently, if he thought the occasion called for it, and a fit opportunity occurred, he would seize it to convey some important moral lesson, or some seasonable religious counsel; and may it not be reasonably hoped, that this, like the seed sown, sometimes fell upon good ground, where it 'sprung up, and yielded fruit an hundred fold?'

"As a Christian life is the best preparative and only sure ground of hope for a peaceful and happy death, that which might reasonably have been hoped for in this case, actually took place, and he who had long and faithfully led the life, was finally permitted to die "the death of the righteous." This mournful event occurred on the 4th of February, 1831, he then being but a few weeks over forty-five years of age." G.

2. *Select Medico-Chirurgical Transactions; or a Collection of the most valuable memoirs read to the Medico-Chirurgical Societies of London and Edinburgh; the Association of Fellows and Licentiates of the King and Queen's College of Physicians in Ireland; the Royal Academy of Medicine of Paris, &c. &c. &c.* Edited by ISAAC HAYS, M. D. Philadelphia; E. L. Carey and A. Hart, 1831. 8vo.

This is a highly valuable publication, containing a variety of essays of permanent interest to the physician. The idea is a good one; and we hope to see the selection continued through a series of volumes. We trust that the enterprising publishers will have no reason to complain of insufficient patronage.

3. *A Manual of Chemistry, containing a condensed view of the present state of the science, with copious references to more extensive treatises, original papers, &c.* By LEWIS C. BECK, M. D. *Professor of Chemistry, &c. &c. &c.* Albany. Webster & Skinner, 1831. 12mo. pp. 458.

We have been pleased in sketching hastily over this Manual. It is concise, and based for its materials upon the latest discoveries in the science of which it treats. The notice of each article, is concluded with ample references, which will prove of much service to the student, or even to the physician. It is no trifling recommendation to Dr. Beck's Manual, that it has already been introduced as a text-book, in several Colleges and large Academies.

4. *Traité de la Péritonite Puerpérale, par A. C. BAUDELLOCQUE, Docteur et Agrégé de la Faculté de Médecine de Paris, &c. &c.* Ouvrage Couronné par la Société Royale de Médecine de Bourdeaux. Paris, 1830. 8vo. pp. 52.

This work is under course of translation by Dr. G. S. BEDFORD, of this city; and will appear, as early as November, from the press of Messrs. Elliott & Palmer. We have attentively looked over some portion of the original, and are certain, that its appearance in an American dress will be hailed by the profession as a valuable addition to standard medical publications. M. Baudelocque has devoted a large portion of his work to *Etiology* of Puerperal Peritonitis. He attributes much of the character of the disease, to the disordered state of the fluids. The observations on Symptomatology evince much discriminating judgment; and the *treatment* shows at least, that the author has not suffered his reason to run wild with the "physiological" notions of gum water, ptisan de guimauve, &c. This is some evidence that he thinks for himself, and can form opinions unaffected by the contagious atmosphere of gastrophobia, with which he is surrounded. Dr. Bedford's familiarity with the French language, and his general abilities, will, we think, insure a faithful translation. The work is highly entitled to the patronage of the profession.

5. *A Manual of General, Descriptive and Pathological Anatomy.* By J. F. MECKLE, *Professor of Anatomy in the University of Halle.* Translated from the French of BRESCHET and JOURDAN. By A. SIDNEY DOANE, M. D., of New-York. New-York, H. C. Sleight. 3 vols. 8vo.

We have had an opportunity to peruse many parts of the first volume of this valuable work, which, in the course of a month or so, will make its appearance from the press. The translation is rendered more correct than the French: this Dr. Doane has been enabled to do, by comparing his own and the Paris edition, with the original German. By this labor, many errors have been discovered both of false translation and omission; the most of which, are of some importance, particularly to the student; as for instance, we have in the French "nerveux", which should be, "vasculaire,"

"moins" for "plus," "cœur" for "foie," "medullaire" for "musculaire," "nervaux" for "osseux"—and so on to a considerable amount of instances. Numerous notes and references of the author, omitted in the French translation, have likewise been restored.

Of the character of Meckles' work, we need scarcely speak. It holds a deservedly high place in the estimation of the first Anatomists of the day. There is a method, a minuteness and erudition about it, which make it one of the most interesting works, or what is generally considered one of the driest subjects. This, together with its mass of practical information, must render it a desirable acquisition to every medical man.

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6. *Directions for making Anatomical Preparations, formed on the basis of Pole, Marjolin, and Brischet, and including the new method of Mr. Swan.* By USHER PARSONS, Professor of Anatomy and Surgery, Jefferson Medical College. Philadelphia. Carey & Lea, 1831. 8vo. pp. 303. (with plates.)

This is unquestionably one of the most useful works, on the preparation of anatomical specimens, ever published. It should be in the hands of every lover of anatomy, and as attention now is more directed to the formation of museums, it will be found a very valuable hand-book. Nothing is omitted that is important, and many new formulæ are introduced, derived from the author's experience, and from rare books, which he has had the industry to collect.

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7. *Remarks on the History and Treatment of Delirium Tremens. From the Transactions of the Massachusetts Medical Society.* By JOHN WARE, M. D., Fellow of the Society. Boston, 1831. 8vo. pp. 61.

Every thing connected with intemperance has received a certain impulse from the attention which the subject has so generally demanded within the last two or three years. We, however, disclaim the idea which has been promulgated with so much exaggeration, that we are a nation of drunkards. We grant that there is too intemperate a use of ardent spirits, but we cannot concede, that as a people, we are more obnoxious to a charge of excessive criminality, than are other nations. Still, although opposed to some of the means used, yet as good citizens, we rejoice that the excitement in the public mind has been productive of much good, not the least of which, perhaps, may be the number of treatises on Delirium Tremens.

Dr. Ware's little memoir adds to many publications, that have lately appeared on the subject to which he has here turned his attention. Although, not entering so minutely into the history and treatment, as has Dr. Cross in the prize essay we have commenced publishing in our present number, still Dr. W. has given us a well-written, interesting pamphlet. Some of the arguments and conclusions we cannot admit as sound, particularly those connected with the notions respecting the injurious efforts of opium in the treatment of Delirium Tremens, and trusting in preference to the spontaneous efforts of nature for a cure.

8. *Burns' Midwifery*.—C. S. Francis has in press, a new edition of this work, containing the latest emendations of the author. The character of the work is well established.
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MISCELLANEOUS.

MEDICAL COLLEGE OF OHIO.

The Honorable the Board of Trustees having reorganized the Faculty of this Institution, it will consist hereafter of the following professors :

Jedediah Cobb, M. D., Anatomy.

Thomas D. Mitchell, M. D., Chemistry and Pharmacy.

James M. Staughton, M. D., Surgery.

John Eberle, M. D., Materia Medica and Botany.

John F. Henry, M. D., Obstetrics, and Diseases of Women and children.

John Morehead, M. D., Theory and Practice of Medicine.

Charles E. Pierson, M. D., Institutes of Medicine, and Medical Jurisprudence.

Daniel Drake, M. D., Clinical Medicine.

The course will commence on the last Monday of October, and will end the last day of February.

The aggregate expense of the tickets, including matriculation, is fixed at one hundred dollars ; and the cost of graduation at twenty-five dollars.

The requisitions of candidates for graduation are,

1. Satisfactory certificates of having studied medicine with some reputable practitioner three years, and of having attended two full courses of Lectures ; or,

2. Of having attended three successive courses of Lectures, and studied, as before, all the time between them ; or,

3. Of having been in regular and reputable practice four years, and of having attended one full course of Lectures—on all the cases, the last course, at least, in this Institution.

The opportunities for the study of practical anatomy will be ample, and the lectures of the Professor, in addition to the usual means of elucidation, will be illustrated by the splendid preparations and plates recently purchased in Europe.

The Library consists of more than one thousand volumes of select works, chiefly European.

The Lectures on Clinical Medicine will be founded on the cases presented in the Commercial Hospital and Lunatic Asylum of Ohio.

The Trustees are now engaged in the erection of an additional edifice, of such dimensions as will render the accommodations in every respect adequate.

The Medical Department of the Miami University having been

merged in the Medical College of Ohio, by the reorganization of the latter, there will be but one Medical School in Cincinnati next winter.

By order,

JAMES M. STAUGHTON, M. D., *Dean.*

Cincinnati, July 13, 1831.

UNIVERSITY OF THE STATE OF NEW-YORK.

COLLEGE OF PHYSICIANS AND SURGEONS.

NEW-YORK, JULY 20, 1831.

THE twenty-fifth session of the College will commence on the first Monday of November next; after which, the several courses of instruction will be continued under the respective Professors, viz.

John Augustine Smith, M. D., on Anatomy and Physiology.

Alexander H. Stevens, M. D., on the Principles and Practice of Surgery.

Joseph M. Smith, M. D., on the Theory and Practice of Physic and Clinical Medicine.

Edward Delafield, M. D., on Obstetrics and the Diseases of Women and Children.

John B. Beck, M. D., on Materia Medica, and Medical Jurisprudence.

John Torrey, M. D., on Chemistry and Botany.

Valentine Mott, M. D., on Surgical Anatomy and Operative Surgery.

Students will enjoy facilities for practical Anatomy, arrangements having been made for that purpose.

Demonstrations of Minute and Surgical Anatomy, with Operations, will be given under the direction of the respective Professors.

The Professors of the Theory and Practice of Physic will give Clinical instruction gratuitously, at the New-York Hospital.

Daily opportunities are afforded of witnessing the Medical and Surgical treatment and operations of the New-York Hospital and Eye Infirmary; to the latter of which, the Directors have granted gratuitous admission to the Students of this University, during the session of the College.

In order to graduation, the candidate must have attained the age of twenty-one years, studied Medicine three years, and attended two full courses of Lectures at some legally incorporated Medical College; the latter course at this University. He must also be provided with the requisite credentials of his age, term of study, and attendance on Lectures.

The expense of attending the entire course of Lectures is, as heretofore, one hundred dollars.

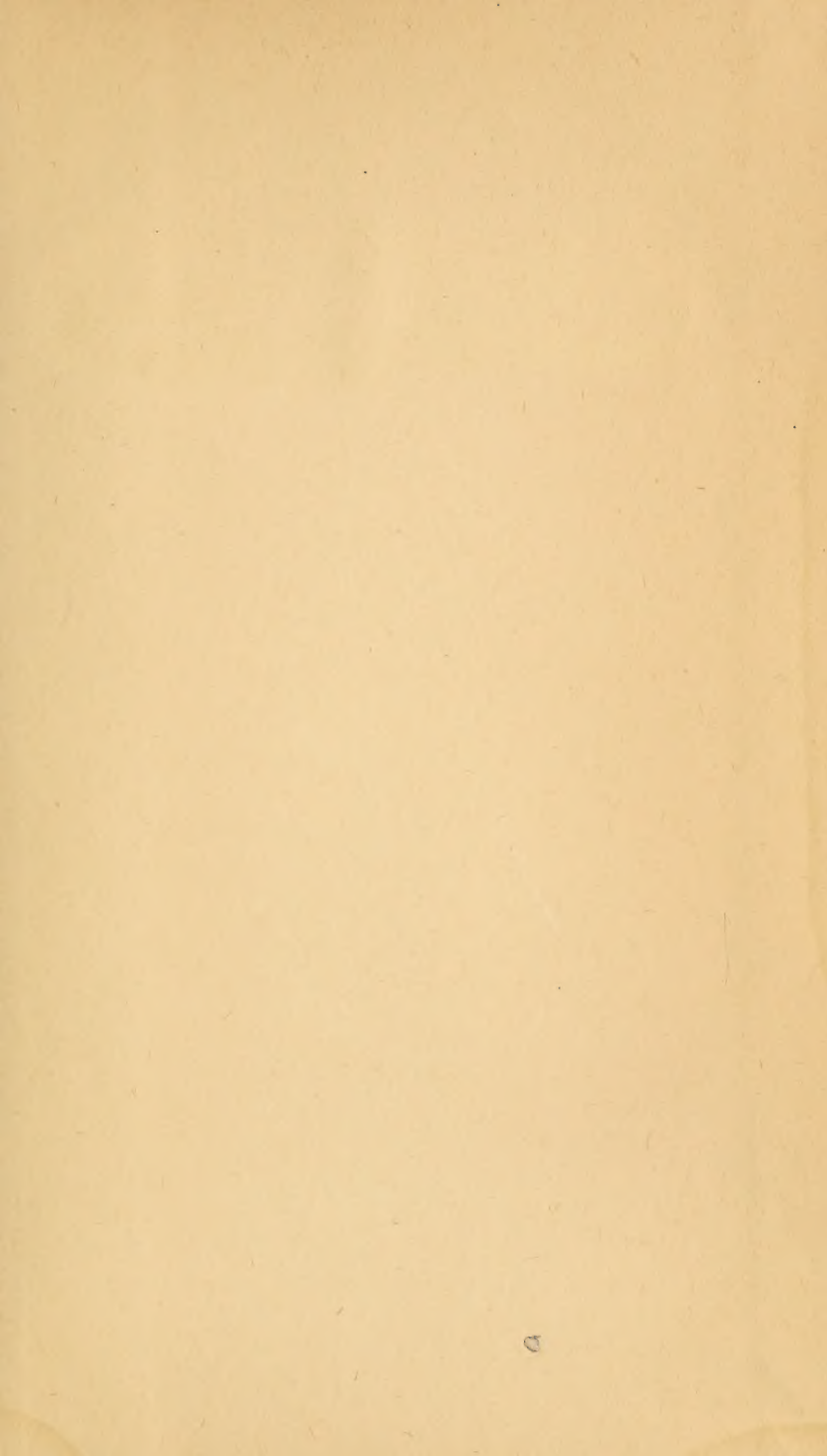
Attendance on two courses of any Professor, entitles the Student to free admission afterwards.

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